AMERICAN PSYCHOLOGICAL ASSOCIATION

Emotion

© 2022 American Psychological Association
ISSN: 1528-3542

2023, Vol. 23, No. 3, 622–632
https://doi.org/10.1037/emo0001126

Effect of Mindfulness-Based Trauma Recovery for Refugees on Shame and Guilt in Trauma Recovery Among African Asylum-Seekers

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We sought to, first, better understand the role of emotional responding, and specifically shame and guilt, in trauma recovery among asylum-seekers following forced displacement; and, second, to explore whether therapeutic effects of a mindfulness- and compassion-based intervention on trauma recovery among asylum-seekers are mediated by therapeutic effects of the intervention on shame and guilt. Study aims were tested through a randomized waitlist-controlled trial of a 9-week Mindfulness-Based Trauma Recovery for Refugees program among a community sample of 158 Eritrean asylum-seekers (55.7% female) residing in an unstable high-risk urban postdisplacement setting in the Middle East (Israel). First, in a cross-product test of parallel mediation, we found that shame, but not guilt, mediated the preintervention associations between traumatic stress exposure history, as well as current postmigration living difficulties, and current posttraumatic stress (ab_{Shame} = .035, 95% CI [.024, .048], ab_{Shame} = .183, 95% CI [.122, .249]) and depression (ab_{Shame} = .384, 95% CI [.234, .55], ab_{Shame} = .405, 95% CI [1.117, 2.693]) symptom severity. Second, in a linear mixed effects model of mediation, we found that reduced shame from pre- to postintervention, mediated the effect of MBTR-R, relative to waitlist control, on improved posttraumatic stress ($ACME_{Shame}$ = −.18, *BCa* 95% CI [−.34, −.04]) and depression ($ACME_{Shame}$ = −1.78, *BCa* 95% CI [−3.29, −.29]) symptom severity outcomes. Findings provide insight into the potential role of shame in trauma- and stress-related recovery among FDPs (forcibly displaced people). Findings indicate that mindfulness- and compassion-based training promotes trauma recovery, in part, through reducing feelings of shame postdisplacement.

Keywords: guilt, mindfulness, refugees, shame, traumatic stress

A global mental health crisis has emerged in the wake of the mass forced displacement of over 82 million people (UNHCR, 2020). Forced displacement due to conflict, persecution, and natural disaster is often characterized by a range of traumatic experience and loss (Morina et al., 2018). Recovery from these traumatic experiences is often hampered by chronic stressors postdisplacement, such as residential, economic, housing and food insecurity, structural damage to family and community support systems, isolation and racism/xenophobia, among other stressors (Hynie, 2018; Li et al., 2016). Consequently, rates of trauma- and stress-related mental health problems, such as posttraumatic stress disorder (PTSD) and depression, are common among FDPs (forcibly displaced people), and in particular among asylum-seekers and refugees residing in unstable high-risk urban postdisplacement settings (Connell, 2012; Guterres & Spiegel, 2012; Nakash et al., 2015). Accordingly, the development of interventions tailored to the mental health needs of FDPs is critically important (Collins et al., 2011; Inter Agency Standing Committee, 2007; UNHCR, 2020). One dimension of field-wide efforts to advance intervention science dedicated to FDP mental health entails the study of

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This article was published Online First August 4, 2022.

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The study was supported by funding from the Israeli Science Foundation, the Minerva Foundation of the Max-Planck-Society, the Varela Award from the European Mind & Life Institute and the Leon Charney Foundation.

The authors thank the courageous asylum-seekers who generously participated in the intervention and study; Sendel Abraham, Dawit Weldehawariat Habtai, Yikealo Beyene, and Mogus Kidane for their assistance in translation, recruitment, and study organization; the team at Kuchinate for hosting us to carry out this study, including Diddy Mymin-Kahn, Sister Azezet Habtezghi Kidane, Ruth Garon, and the inspiring women of Kuchinate—Hewan Desta, Eden Gebre, Asmeret Haray, Fiori Yonas, Achbaret Abraha; Orit Reem and Ron Alon for instructing the groups; Ron Peleg for his help in participant recruitment and data collection; Michal Schendar for conducting qualitative interviews with participants; Meital Gil Davis for behind-the-scenes coordination of study logistics, research funding, and personnel; and Ido Lurie and Ori Ganor for psychiatric consultation. The study is registered (ClinicalTrials.gov NCT04380259). The authors have no conflict of interests to disclose.

Amit Bernstein, Anna Aizik-Reebs, and Kim Yuval designed the study and conducted it together with Solomon Gebreyohans Gebremariam. Yuval Hadash, Anna Aizik-Reebs, Kim Yuval, and Amit Bernstein developed the MBTR-R intervention program and manual.

All authors contributed to article writing.

Materials and analysis code for this study are not available.

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malleable risk factors that may contribute to the etiology and maintenance of stress- and trauma-related mental health problems postdisplacement. Such knowledge is not only important for better understanding trauma responding and recovery, but also for the development and optimization of interventions to promote recovery postdisplacement (Garner et al., 1983; Garner & Garfinkel, 1979; Goodlin-Jones & Anders, 2001; Zvolensky et al., 2006).

To contribute to this field-wide effort, we focus here on shame and guilt—key forms of emotional responding that have been implicated in trauma recovery and that may be important to the experience of forced displacement (Cunningham, 2020; Lee et al., 2001). Briefly, shame and guilt have been conceptualized as self-evaluative emotions, entailing comparison of one's self and behavior to social standards and rules, and thereby implicated in socialization and adherence to norms and morals (Goffman, 2005; Lewis, 2008; Miller & Leary, 1992). Shame is characterized by self-referential negative emotion, including self-disgust or -hatred, due to discordance between social standards or expectations and self-evaluation (Stone, 1992). Guilt is characterized by feelings of remorse secondary to self- or other-attribution of responsibility for violating social standards or expectations, such as offending or harming others or violating values (e.g., moral injury; Kubany & Watson, 2003). The development of trauma-related guilt and shame is therefore related to characteristics of traumatic events (e.g., type, duration, and frequency) as well as cognitive interpretations of those events (e.g., evaluating one's role in a traumatic event). Such interpretations may be maintained or exacerbated by social reactions (moral standards) as well as posttraumatic symptoms (Baumeister et al., 1994; Kugler & Jones, 1992; Stone, 1992).

There are a number of reasons to expect that shame and guilt may be implicated in trauma recovery among FDPs. First, FDPs are often exposed to various forms of potentially traumatic experiences such as sexual- and gender-related violence, torture, and human trafficking (Hooberman et al., 2007; Thabet et al., 2004). In Western Educated Industrialized Rich and Democratic (WEIRD; Henrich et al., 2010) populations and contexts, such social or interpersonal traumatic experiences, in particular, have been associated with the experience of peritraumatic as well as posttraumatic shame (Budden, 2009; Dorahy, 2010; Dorahy & Clearwater, 2012; Harvey et al., 2012). Second, experiences endemic to forced displacement can entail moral transgressions or attribution of responsibility for transgressions that were harmful to others or violated values or social conventions (e.g., harm to others necessary for survival, abandoning dependents such as children or family, witnessing violence and atrocities; Hooberman et al., 2007; Thabet et al., 2004). In WEIRD samples, such experiences and related moral injuries have been consistently associated with feelings of guilt posttrauma (Kubany & Watson, 2003; Lewis, 1971; Litz et al., 2009; Tangney & Dearing, 2002; Watson et al., 1991). Third, trauma- and stress-related mental health problems, such as PTSD and depression, are common among FDPs, particularly in unstable postdisplacement contexts characterized by postmigration living stressors (Aizik-Reebs, Yuval, et al., 2021; Connell, 2012; Murray et al., 2014; Nakash et al., 2015; UNHCR, 2020). In WEIRD populations, feelings of shame and guilt posttrauma have been consistently associated with such symptomatic responding to trauma (Aakvaag et al., 2014, 2016; Andrews et al., 2000; Badour et al., 2017).

Yet, despite the theorized role(s) of shame and guilt in trauma recovery among FDPs (Lee et al., 2001; Nickerson et al., 2011; Stone, 1992), empirical evidence is limited. In one study of adolescents seeking asylum in Germany, degree of traumatic stress event exposure correlated with feelings of shame and guilt postdisplacement (Stotz et al., 2015). In a second study among former child soldiers from Northern Uganda, guilt mediated the association between past trauma and current PTSD (Murphy et al., 2017); shame was not measured in this study.

In addition to initial evidence implicating shame and guilt in trauma responding and recovery, research has also explored whether interventions designed to ameliorate trauma symptoms may also reduce shame and guilt; and whether, as theorized, therapeutically impacting shame and guilt may contribute to trauma recovery (Clifton et al., 2017; Larsen et al., 2019; Nishith et al., 2002, 2005; Øktedalen et al., 2015; Resick et al., 2008). Mindfulness- and compassion-based interventions, and interventions incorporating elements of mindfulness and compassion practices, have demonstrated salutary effects on shame (Goldsmith et al., 2014) and guilt (Held et al., 2017) in WEIRD populations. To date, no study has tested whether a mindfulness- or compassion-based intervention is likely to also alleviate shame and guilt among FDPs, or whether such therapeutic effects may contribute to trauma recovery.

Important initial steps have been made to explore the potential therapeutic utility of mindfulness- and compassion-based training to promote well-being, trauma recovery and coping with postmigration living difficulties among FDPs (Aizik-Reebs, Yuval, et al., 2021; Van der Gucht et al., 2019). Specifically, Mindfulness-Based Trauma Recovery for Refugees (MBTR-R) is a nine-session mindfulness-based group intervention that is trauma-sensitive and socioculturally adapted for diverse populations of FDPs (Aizik-Reebs, Yuval, et al., 2021). In a randomized waitlist-controlled trial, MBTR-R led to reduced rates and severity of stress- and trauma-related mental health outcomes including PTSD, depression, anxiety, multimorbidity as well as elevations in subjective wellbeing among a sample of Eritrean asylum-seekers in an unstable high-risk urban postdisplacement setting in the Middle East (Aizik-Reebs, Yuval, et al., 2021). Aizik-Reebs, Yuval, et al. (2021) documented that MBTR-R also appears to be safe, for even the most vulnerable asylum-seekers—the intervention was not associated with elevated participant-level rates of clinically significant deterioration in monitored mental health outcomes.

Among a variety of therapeutic targets (Aizik-Reebs et al., 2022; Aizik-Reebs, Yuval, et al., 2021), MBTR-R was specifically designed to reduce shame and guilt. First, to counter habituated feelings of shame and guilt, loving-kindness and self-compassion practices were taught as ways of more skillfully responding to and coping with shame, guilt, and other forms of self-judgment and hostility common to trauma- and stress-related mental health problems. Second, as an alternative to self-judgmental reactions to experiences such as shame and guilt, MBTR-R was designed to elevate self-acceptance and the capacity for nonjudgmental awareness of experience. Third, MBTR-R focused on fostering the capacities to decenter and disengage from maladaptive thought content common to shame and guilt, and to adaptively respond to these mental states using skillful action (Aizik-Reebs et al., 2022; Van den Brink & Koster, 2015). Fourth, psychoeducation about posttraumatic stress, stress reactivity, and depression is integrated in the intervention to normalize and de-stigmatize, trauma- and

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stress-related mental health problems, and thereby feelings of posttraumatic shame and guilt (Dutton et al., 2013; Kelly & Garland, 2016). We therefore expect that MBTR-R may have a salutary impact on shame and guilt, and that these effects are likely to, at least in part, mediate or help account for the effects of the intervention on previously observed trauma recovery outcomes.

Aims

First, we aimed to test whether shame and guilt mediated the association between past traumatic stress exposure, as well as current chronic stress postdisplacement, and current trauma- and stress-related mental health problems including posttraumatic stress- and depression-symptom severity. Second, we aimed to test whether the expected therapeutic effects of MBTR-R, relative to waitlist control, on shame and guilt mediated the effect of the intervention on posttraumatic stress- and depression-symptom severity outcomes.

Method

Participants

This study is a secondary analysis of a single-site randomized waitlist-controlled trial examining MBTR-R versus a waitlist control in a community sample of Eritrean-asylum seekers (n = 158, 55.7% women, M (SD) = 31.8 (5.21) years old) residing in an urban postmigration setting in the Middle East (Israel). Asylum-seekers were recruited via public flyers, community recruitment and via local NGOs and municipal organizations working with this community. Over the course of 1 year, three cohorts of Eritrean asylum-seekers were recruited and randomized to either MBTR-R or waitlist control. Exclusion criteria were (a) active suicidality, past suicide attempt, or acute risk for committing suicide; (b) current psychotic symptoms; (c) current mental health treatment (psychiatrist, psychotherapy, psycho-social support group). Randomization was conducted via random number generation in blocks of two conditions with 3:1 ratio of MBTR-R (n = 98) to control participants (n = 60). Randomization and sample size determination was done based on a power analysis to, first, ensure sufficient number of participants to detect medium size between-group effects; and, second, to ensure sufficient power to detect moderate effects in planned mediation analyses among the MBTR-R group (Borm et al., 2007; Moher et al., 2009). The study received human subjects' research ethics approval by a University of Haifa Institutional Review Board committee.

The selected population of Eritrean asylum-seekers are representative of a large and fast-growing forcibly displaced population in the current global refugee crisis (Aizik-Reebs, Yuval, et al., 2021). First, members of this community were exposed to a large number of severely traumatizing events (Connell, 2012; Van Reisen & Mawere, 2017). Second, members of this community have not received refugee or formal residential status such that their future remains unpredictable and uncertain due to ongoing threat of detention or deportation (Orgal et al., 2019; Rozen & Michaeli, 2015). Third, members of this community are struggling with chronic and often severe postmigratory life-stressors (e.g., conflict with immigration officials, lack of access to vocation and occupational opportunities, separation from family members) implicated in stress-related mental health problems that interfere with trauma recovery (Hinton et al., 2011; Miller & Rasmussen, 2017; Rozen & Michaeli, 2015; Yuval et al., 2020).

Procedure

Following assessment for eligibility to participate in the study through a phone screening, informed consent, and randomization to condition, participants completed the preintervention assessment including self-report questionnaires. Following the 9-week intervention or identical waitlist control period, participants completed assessments at one-week postintervention. MBTR-R participants also completed a follow-up assessment 5 weeks after the postintervention assessment. Waitlist control participants only completed the 1-week postintervention assessment to ensure that we did not unnecessarily delay treatment for asylum-seekers in the waitlist control condition (Aizik-Reebs, Yuval, et al., 2021; Gold et al., 2017).

MBTR-R Intervention Condition

Please see Aizik-Reebs, Yuval, et al. (2021) for a detailed description of MBTR-R. Briefly, MBTR-R is a mindfulness- and compassion-based group (10–15 participants) intervention consisting of nine 2.5-hr weekly sessions. MBTR-R format and structure parallel common MBIs, including mindfulness-based stress reduction (MBSR) and mindfulness-based cognitive therapy (MBCT), and includes systematic training in formal and informal mindfulness practices (e.g., body scan, sitting meditation, mindful movement, 3-min breathing). MBTR-R includes a variety of trauma-sensitive adaptations and practices (e.g., "safe place" practice, window of tolerance, psychoeducation related to chronic stress and trauma) in order to reduce risk of adverse responding and to optimize salutary benefits of mindfulness meditation practices (e.g., Treleaven, 2018). Likewise, MBTR-R includes sociocultural adaptations to provide optimal conditions for diverse asylum-seekers to learn mindfulness and key intervention principles and to benefit from the group format (e.g., Bernal & Sáez-Santiago, 2006; Dutton et al., 2013; Hinton et al., 2013; Tol et al., 2014).

Waitlist Control Condition

The wait-list control design was selected due to ethical considerations (Gold et al., 2017) as well as logistical constraints involved in carrying out an intervention study in this unstable high-risk urban postdisplacement context. Likewise, to reduce burden on this vulnerable population, no additional assessments were conducted following the nine-week waitlist control period. Furthermore, because this was the first trial of MBTR-R, we did not yet know safety or efficacy outcomes, and were committed to provide participants seeking assistance randomized to waitlist control, mental health care that would not involve exposing them to any unnecessary risk (Gold et al., 2017). Thus, following the 9-week waitlist period and postintervention assessment, participants randomized to waitlist control were offered an equivalent group intervention (i.e., 22.5 total hours, group instructor and cultural mediator, psychoeducation, and low-intensity cognitive behavior therapy skill training, relaxation techniques). When participants were randomized to condition, MBTR-R and the waitlist control,

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interventions were described nearly identically in terms of purpose, total number of hours, and so forth, so as to ensure similar expectancy effects and motivation between conditions.

Measures

All questionnaires were translated and back-translated, and psychometrically evaluated and validated for this study or in earlier research—either in our or other research groups' studies of these specific African asylum seeker populations (Badri et al., 2012; Reebs et al., 2017; Tanay & Bernstein, 2013; Yuval et al., 2017, 2020; Yuval & Bernstein, 2017). All translated measures were pilot-tested and revised, in an iterative process, which included cognitive interviewing with translators and Eritrean asylum-seekers to ensure linguistic as well as sociocultural meaning (Miller & Fernando, 2008; Sartorius & Kuyken, 1994). All measures were administered in the preintervention and postintervention assessments.

The Harvard Trauma Questionnaire (HTQ; Mollica et al., 1992) entails a 16-item self-report of traumatic stress exposure and a 16-item self-report of PTSD symptoms. HTQ was developed to be used among diverse sociocultural groups and languages, and is a well-established instrument to measure traumatic stress and PTSD symptoms in diverse forcibly displaced populations, including East African populations specifically (Darzi, 2017; Hollifield et al., 2002; Nakeyar & Frewen, 2016; Reebs et al., 2017). Traumatic stress exposure scores can range from 16 (no events) to 64 (all events). Each traumatic event item was rated from 1 (*no*), 2 (*heard about it*), 3 (*witnessed it*), 4 (*experienced it*). As in past studies, we classified exposure to traumatic events as not exposed (1 or 2) or exposed (3 or 4). PTSD symptom severity scores can range from 16 (*no symptoms*) to 64 (*severe symptoms*). PTSD symptom Items were rated on a Likert-type scale ranging from 1 (*not at all*) to 4 (*extremely*). Total and *DSM–IV* symptom subscale scores, including reexperiencing, avoidance, and arousal symptoms, can be calculated. In the present study, HTQ subscales demonstrated good to excellent internal consistency (Cronbach's alpha = .89 to .91), similar to previous studies of HTQ (Farhood & Dimassi, 2012; Silove et al., 2007).

The Brief Patient Health Questionnaire (PHQ-9; Spitzer et al., 1999) is a nine-item self-reported measure of depressive symptoms. The PHQ-9 is a commonly used measure of depression in diverse populations and FDPs (Poole et al., 2019). Depression symptom severity scores can range from 0 (*no symptoms*) to 27 (*severe symptoms*). Items were rated on a Likert-type scale ranging from 0 (*not at all*) to 3 (*nearly every day*). In the present study, PHQ-9 demonstrated good internal consistency (Cronbach's alpha = .88), similar or stronger than in previous studies (e.g., Beard et al., 2016; Milette et al., 2010)

The State Shame and Guilt Scale (SSGS; Marschall et al., 1994) is a 10-item self-report measure of shame ("I want to sink into the floor and disappear"; "I feel small") and guilt ("I feel remorse, regret"; "I feel like apologizing, confessing"). Shame and guilt scale scores can range from 10 to 50. Items were rated on a Likert-type scale ranging from 1 (*not feeling this way at all*) to 5 (*feeling this way very strongly*; see Table 1). In the present study, the measure had acceptable to good levels of internal consistency (Cronbach's alpha = .71 for guilt and .84 for shame), similar to previous studies in other populations (e.g., Tangney & Dearing, 2003).

The Postmigration Living Difficulties Scale (PMLD; Silove et al., 1997) is a self-reported measure of current postmigration stressors. As we used a nine-item adapted version of PMLD scale, scores can range from 9 to 45. Items were rated on a Likert-type scale ranging from 1 (*was not a problem/did not happen*) to 5 (*a very serious problem*). In the present study, PMLD demonstrated acceptable to good levels of internal consistency (Cronbach's alpha = .79), similar to or stronger than previous studies (Cronbach's alpha = .61; McEwen et al., 2022).

Transparency and Openness

We report how we determined our sample size, all data exclusions, all manipulations, but not all measures in this study as this is a secondary analysis of randomized waitlist-controlled trial. The study was registered (ClinicalTrials.gov #NCT04380259). Analysis code for this study are not available, more details on study materials can be found in the main outcome study (Aizik-Reebs, Yuval, et al., 2021). Data were analyzed using SPSS (IBM, 2012) and the "mediation" package in R (Tingley et al., 2014).

Table 1
Shame and Guilt Item-Scale Intercorrelations

Variable	Shame subscale	Guilt subscale
Shame subscale	1	
Guilt subscale	.66**	
Shame subscale items		
I want to sink into the floor and disappear	.74**	.43**
I feel small	.78**	.52**
I feel like I am a bad person	.77**	.53**
I feel humiliated, disgraced	.79**	.56**
I feel worthless, powerless	.87**	.58**
Guilt subscale items		
I feel remorse, regret	.61**	.69**
I feel tension about something I have done	.58**	.73**
I cannot stop thinking about something bad I have done	.52**	.82**
I feel like apologizing, confessing	.13	.46**
I feel bad about something I have done	.45**	.74**

** $p < .01$.

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Data Analytics

First, in a cross-product test of parallel mediation (Baron & Kenny, 1986) using PROCESS (Hayes, 2009) in SPSS (IBM, 2012), we tested whether shame and guilt mediated the associations between traumatic stress exposure history (measured by HTQ) as well as post-migration living difficulties on preintervention levels of posttraumatic stress- and depression- symptom severity. Second, in a linear mixed effects model of mediation with an accelerated, bootstrapped, cross-product test of mediation using the "mediation" package in R (Tingley et al., 2014), we tested whether change in shame from pre- to postintervention mediated the effect of MBTR-R, relative to waitlist control, on reduced posttraumatic stress- and depression-symptom severity. We used restricted maximum likelihood (REML) to account for missing observations. Models entailed fixed effects of group (MBTR-R vs. waitlist control), assessment session (pre- vs. postintervention assessment) and their interaction terms. Per subject intercept was modeled as a random effect. Mediation analyses were conducted among MBTR-R treatment completers (participants who attended more than half (> 4) of the MBTR-R sessions; Kuyken et al., 2016; Spinhoven et al., 2017). Rigorous, internally valid study of target engagement and mechanisms of action requires sufficient dosing (Kazdin, 2007, 2009; Spokas et al., 2008).

Results

See Table 2 for descriptive statistics of shame and guilt at baseline. Levels of shame, M (SD) = 11.8 (6.24), were significantly lower than levels of guilt, M (SD) = 14.38 (5.39), $t(156) = -6.67$, $p < .01$. See Table 1 for intercorrelations between guilt and shame subscale scores and items. Age was not significantly related to shame, $r(157) = .45$, $p = .57$, or guilt, $r(158) = .65$, $p = .41$. Men, M (SD) = 12.69 (6.44), demonstrated elevated, but not significantly higher, levels of shame relative to women, M (SD) = 10.78(5.87), $t(156)=1.92$, $p = .056$. Likewise, men, M (SD) = 14.75 (4.92), demonstrated elevated, but not significantly higher levels, of guilt relative to women, M (SD) = 13.95(5.89), $t(155)=1.92$, $p = .096$. Notably, preintervention, waitlist control group demonstrated modestly higher levels of shame, $t(155) = 2.56$, $p < .05$, and guilt, $t(156) = 2.14$, $p < .05$, relative to the MBTR-R.

Aim 1: Did Shame and Guilt Mediate the Association Between Risk Factors and Trauma Recovery Postdisplacement?

Table 3 shows regression coefficients, standard errors, and model summary information for the shame and guilt parallel multiple mediator model (see Figure 1). First, shame (ab_{Shame} = .035, 95% CI [.024, .048]), but not guilt (ab_{Guilt} = .007, 95% CI [−.001, .016]) mediated the association between HTQ number of traumatic experiences and posttraumatic stress symptom severity (Model 1). Second, shame (ab_{Shame} = .384, 95% CI [.234, .55]) but not guilt (ab_{Guilt} = .056, 95% CI [−.036, .165]) mediated the association between HTQ number of traumatic experiences and depression symptom severity (Model 2). Third, shame (ab_{Shame} = .183, 95% CI [.122, .249]) but not guilt (ab_{Guilt} = .034, 95% CI [−.001, .078]) mediated the association between postmigration living difficulties and posttraumatic stress symptom severity (Model 3). Finally, and again, shame (ab_{Shame} = .405, 95% CI [1.117, 2.693]) but not guilt (ab_{Guilt} = .2, 95% CI [−.197, .594]) mediated the association between postmigration living difficulties and depression symptom severity (Model 4).

Table 2

Descriptive Statistics State Shame and Guilt Scale (SSGS) Pre- and Postintervention by Condition

	Wait-list control		MBTR-R	
SSGS subscale scores	N	M (SD)	N	M (SD)
Shame preintervention	60	13.4 (5.95)	52	10.81 (6.23)
Shame postintervention	48	11.97 (5.62)	52	9.62 (5.42)
Guilt preintervention	60	15.55 (5.12)	52	13.67 (5.45)
Guilt postintervention	48	15.35 (5.89)	52	13.04 (5.08)

Note. MBTR-R = Mindfulness-Based Trauma Recovery for Refugees.

Aim 2: Were Therapeutic Effects of MBTR-R for Trauma Recovery Outcomes Mediated by Effects on Shame?

Table 2 shows descriptive statistics of shame and guilt pre- and postintervention. Table 4 shows regression coefficients, standard errors, and summary information for model with shame as mediator (see Figure 2). Change in shame from pre- to postintervention mediated the effect of MBTR-R, relative to waitlist control, on change in posttraumatic stress symptom severity ($ACME = -.18$, BCa 95% CI [−.34, −.04], proportion mediated = .57, BCa 95% CI [.19, 1.09]) and depression symptom severity ($ACME = -1.78$, BCa 95% CI [−3.29, −.29], proportion mediated = .65, BCa 95% CI [.19, 1.33]). Only shame was tested as a mediator, as guilt did not mediate associations between risk factors (HTQ number of traumatic experiences, postmigration living difficulties) and trauma recovery postdisplacement (posttraumatic stress- and depression-symptom severity) prior to the intervention (Aim 1). A secondary post hoc linear mixed effects model of mediation confirmed that pre- to postintervention change in guilt did not mediate the effect of MBTR-R on symptom severity outcomes independent of pre- to postintervention change in shame.

Discussion

We sought to, first, better understand (mal)adaptive emotional responding, and specifically the role of shame and guilt, in recovery from forced displacement; and, second, to explore whether expected therapeutic effects of mindfulness- and compassion-based training on shame and guilt mediate effects of the intervention on trauma recovery outcomes. Study aims were tested in a secondary analysis of a randomized waitlist-controlled trial of a 9-week Mindfulness-Based Trauma Recovery for Refugees (MBTR-R) program among 158 East African unrecognized asylum-seekers residing in an unstable urban postdisplacement setting in the Middle East (Israel; Aizik-Reebs, Yuval, et al., 2021).

First, as theorized, asylum-seekers demonstrated elevated levels of shame and guilt, much like those observed among WEIRD populations suffering from PTSD (Dorahy et al., 2013; Held et al., 2015). Furthermore, we found that shame, but not guilt, mediated the associations between traumatic stress exposure history, as well as current postmigration living difficulties, and posttraumatic stress- and depression-symptom severity outcomes postdisplacement. Findings support previously observed associations between

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Table 3
Regression Coefficients, Standard Errors, and Model Summary Information for Parallel Mediation Model of Risk Factors and Trauma Recovery Postdisplacement Through Shame and Guilt

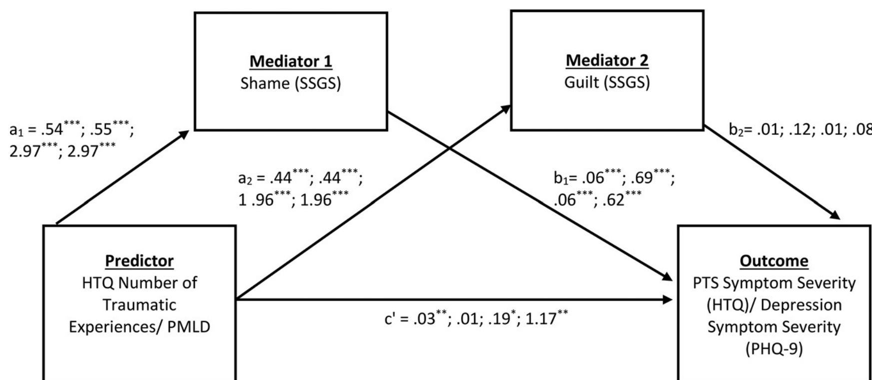
Variable		Shame				Guilt				PTS symptoms severity			Depression symptoms severity		
		Coeff.	*SE*	*p*		Coeff.	*SE*	*p*		Coeff.	*SE*	*p*	Coeff.	*SE*	*p*
HTQ	a_1	.54	.10	.000	a_2	.44	.08	.000	c'	.03	.00	.005	—	—	—
Shame		—	—	—		—	—	—	b_1	.06	.00	.000	—	—	—
Guilt		—	—	—		—	—	—	b_2	.01	.00	.097	—	—	—
Constant	i_{M1}	7.45	.98	.000	i_{M2}	10.83	.84	.000	i_Y	.92	.11	.000	—	—	—
		$R^2 = 0.16$				$R^2 = 0.15$				$R^2 = .59$					
		$F(1, 138) = 27.03, p = .000$				$F(1, 138) = 24.10, p = .000$				$F(3, 136) = 67.67, p = .000$					
HTQ	a_1	.55	.10	.000	a_2	.44	.08	.000	c'	—	—	—	.01	.09	.842
Shame		—	—	—		—	—	—	b_1	—	—	—	.69	.08	.000
Guilt		—	—	—		—	—	—	b_2	—	—	—	.12	.09	.199
Constant	i_{M1}	7.42	.97	.000	i_{M2}	10.83	.84	.000	i_Y	—	—	—	−2.05	1.16	.080
		$R^2 = 0.17$				$R^2 = 0.15$							$R^2 = 0.53$		
		$F(1, 137) = 28.33, p = .000$				$F(1, 137) = 25.15, p = .000$							$F(1, 135) = 51.10, p = .000$		
PMLD	a_1	2.97	.47	.000	a_2	1.96	.43	.000	c'	.19	.04	.020	—	—	—
Shame		—	—	—		—	—	—	b_1	.06	.00	.000	—	—	—
Guilt		—	—	—		—	—	—	b_2	.01	.00	.060	—	—	—
Constant	i_{M1}	2.07	1.63	.206	i_{M2}	8.01	1.47	.000	i_Y	.58	.15	.002	—	—	—
		$R^2 = 0.20$				$R^2 = 0.11$				$R^2 = 0.59$					
		$F(1, 154) = 38.61, p = .000$				$F(1, 154) = 20.64, p = .000$				$F(1, 152) = 73.58, p = .000$					
PMLD	a_1	2.97	.47	.000	a_2	1.96	.43	.000	c'	—	—	—	1.17	.43	.008
Shame		—	—	—		—	—	—	b_1	—	—	—	.62	.08	.000
Guilt		—	—	—		—	—	—	b_2	—	—	—	.08	.08	.334
Constant	i_{M1}	2.09	1.63	.201	i_{M2}	8.01	1.48	.000	i_Y	—	—	—	−4.23	1.47	.004
		$R^2 = 0.20$				$R^2 = 0.11$							$R^2 = 0.53$		
		$F(1, 153) = 39.00, p = .000$				$F(1, 153) = 20.52, p = .00$							$F(1, 151) = 57.43, p = .000$		

Note. PTS = posttraumatic stress; HTQ = The Harvard Trauma Questionnaire (Mollica et al., 1992); PMLD = The Post-Migration Living Difficulties Scale (Silove et al., 1997); Shame and guilt = The State Shame and Guilt Scale (SSGS; Marschall et al., 1994).

shame and posttraumatic stress- and depression-symptom severity among WEIRD populations (Aakvaag et al., 2014, 2016; Andrews et al., 2000; Kealy et al., 2018; Szentagotai-Tatar & Miu, 2016) and initial data among FDPs (Stotz et al., 2015).

Findings are in line with theory implicating shame in trauma recovery and allude to its potential importance as an intervention target more broadly (Lee et al., 2001). Traumatic events and their cognitive interpretations may function to generate shame, which

Figure 1
Mediation Effect of Shame and Guilt on The Association Between Risk Factors and Trauma Recovery Postdisplacement



Note. Diagram of parallel mediation models. Indirect effect of predictor on outcome through mediators Shame and Guilt. PMLD = postmigration living difficulties; HTQ = Harvard Trauma Questionnaire; PHQ-9 = Brief Patient Health Questionnaire; PTS = posttraumatic stress. Guilt and shame were entered as parallel mediators to estimate the indirect effect of HTQ number of traumatic experiences (Models 1 and 2) and PMLD (Models 3 and 4) on PTSD symptom severity (Models 1 and 3) and depression symptom severity (Models 2 and 4). Coefficients presented are described in model order (e.g., Model 1 through 4).
* $p < .05$. ** $p < .01$. *** $p < .001$.

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Table 4

Regression Coefficients, Standard Errors, and Model Summary Information for Shame Mediator Model

Variable		Shame				PTS symptom severity			Depression symptom severity		
		Coeff.	*SE*	*p*		Coeff.	*SE*	*p*	Coeff.	*SE*	*p*
Randomization	a_1	.04	.96	.612	c'	−.08	.10	.285	.07	1.02	.297
Shame		—	—	—	b_1	.64	.00	.000	.68	.05	.000
Constant	i_{M1}	.18	1.19	.000	iY	.10	.15	.000	−.08	1.41	.159
		$R^2 = 0.06$				$R^2 = .51$			$R^2 = .51$		
		$F(1, 112) = .25, p = .61$				$F(2, 112) = 183.17, p < .001$			$F(2, 112) = 180.12, p < .001$		

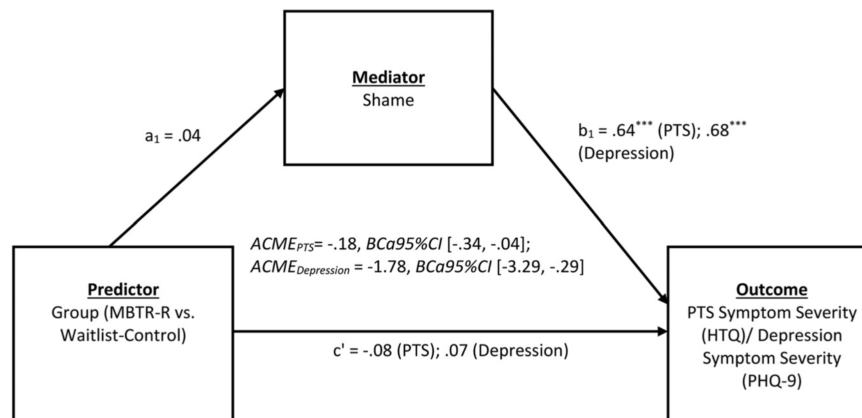
Note. Shame = The State Shame and Guilt Scale (SSGS; Marschall et al., 1994); PTS = posttraumatic stress.

may then be maintained or intensified by social responding and isolation, as well as motivation and acts intended to conceal and protect against negative social evaluation (Lewis, 2008; Stone, 1992). This process is thought to interfere with trauma recovery by impairing more adaptive processing of trauma memories and reducing access to social support (Joseph et al., 1997; Lee et al., 2001). This may be particularly relevant among traditional cultures that value group-oriented behavior (cf. self-reliance), such as asylum-seekers from Eritrea. In such sociocultural contexts, shame may be more profoundly associated with the fear that one's inadequacies will result in the loss of union with, or expulsion from the group (Creighton, 1990). In turn, therapeutically targeting shame may thereby promote more adaptive responding to trauma and thereby facilitate recovery. Furthermore, findings may contribute to an ongoing discourse regarding the role of guilt in trauma- and stress-related mental health problems (Pugh et al., 2015). Indeed, scholars have debated whether and how guilt may be related to posttraumatic stress symptom severity. Some studies have documented evidence for guilt in poor trauma recovery (e.g., Kubany & Watson, 2003) whereas other studies have not (e.g., Leskela et al., 2002). One hypothesis and set of observations has argued that the role of guilt in posttraumatic stress symptom severity may be limited to the presence of, or dependent on the concurrent development of, shame (e.g., Leskela et al., 2002; Lewis, 1971, 2013; Tangney & Dearing, 2002). The present findings among asylum-seekers are consistent with the latter hypothesis. The present initial findings must nevertheless be considered cautiously in light of earlier studies in WEIRD populations wherein guilt demonstrated psychopathogenic or traumatogenic effects that were independent of shame (Kubany et al., 1996; Kubany & Watson, 2003).

Second, we found that therapeutic effects of mindfulness- and compassion-based training for posttraumatic stress- and depression-symptom severity outcomes (Aizik-Reebs, Yuval, et al., 2021) were mediated by the effects of the intervention on shame. Findings are consistent with theory (Gilbert, 2003; Lee et al., 2001) as well as well as earlier pilot data among WEIRD participants (Goldsmith et al., 2014). Findings are also consistent with the therapeutic design of MBTR-R to target maladaptive self-evaluative emotional responding to trauma and stress, such as shame, by means of various intervention practices and principles such as self-compassion, self-acceptance, nonjudgmental awareness, decentering, and psychoeducation (Dutton et al., 2013; Kelly & Garland, 2016). Findings may thus contribute to our understanding of candidate mechanisms through which mindfulness- and compassion-based training, and

Figure 2

Mediation Effect of Shame on Therapeutic Effects of MBTR-R on Stress- and Trauma-Related Mental Health Outcomes



Note. Diagram of mediation model. HTQ = Harvard Trauma Questionnaire; PHQ-9 = Brief Patient Health Questionnaire; PTS = posttraumatic stress; MBTR-R = Mindfulness-Based Trauma Recovery for Refugees. Change in shame was entered as mediator to estimate the indirect effect of group on change in outcomes (PTS symptom severity and depression symptom severity).
*** $p < .001$.

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specifically MBTR-R, may promote trauma recovery. It is important that future study explore whether therapeutic change in shame may be a universal, causal mechanism in trauma recovery among FDPs across emerging interventions (Bolton et al., 2014; Buhmann et al., 2016; Neuner et al., 2018; Silove et al., 2017) or whether such effects are unique to mindfulness- and compassion-based interventions.

The present study is limited in a number of ways that may inform ongoing study of intervention science dedicated to FDP mental health. First, findings are limited to the observed sample of Eritrean asylum-seekers. Although Eritrean asylum-seekers constitute a large group of asylum-seekers worldwide (UNHCR, 2020) and their stressful, uncertain and insecure urban postdisplacement setting represents a common and fast-growing context for forcibly displaced populations (UNHCR, 2020), observed findings may not generalize to other FDPs populations, contexts, or survivors of other forms of trauma. Study of shame and guilt, and the potential of mindfulness- and compassion-based training to therapeutically impact these emotion processes, in additional FDP populations and contexts is needed. Second, while the findings support the role of shame as a mechanism of mindfulness- and compassion-based training in trauma recovery among asylum-seekers, its relative importance and interrelations with other key mindfulness mechanisms such as compassion, self-acceptance, nonjudging, and decentering have yet to be tested (Aizik-Reebs, Shoham, et al., 2021). Third, measurement of shame and guilt was limited to self-report.

Behavioral assessment methods may be important to advance study of shame and guilt (Andrews, 1998). Likewise, it is important that additional studies examine the robustness of the observed effects with respect to shame and guilt beyond the specific measurement methodology tested here. Fourth, statistical mediation was tested at two time-points, from pre- to postintervention, limiting our capacity to infer temporal order between change in the mediator and outcomes (Kazdin, 2009). Important to the ethical conduct of the study among a vulnerable population postdisplacement, waitlist control participants only completed the 1-week post-intervention assessment to ensure that we did not unnecessarily withhold treatment for asylum-seekers (Gold et al., 2017). It is important that future study, contrasting MBTR-R to an active control condition, assess candidate mechanistic processes such as shame and outcomes at least over three time-points. Fifth, in contrast to the limited waitlist control design, a randomized active-control test is important to strengthen experimental confidence in reported findings (Davidson & Kaszniak, 2015).

In summary, findings may provide novel insight into the potential role of shame in trauma- and stress-related recovery among asylum-seekers, as well as initial promising evidence that mindfulness- and compassion-based training promotes trauma recovery, in part, through reducing feelings of shame. We hope that findings contribute to field-wide efforts to advance intervention science dedicated to the mental health of FDPs broadly and of mindfulness- and compassion-based intervention programs more specifically.

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Received October 4, 2021
Revision received May 3, 2022
Accepted May 5, 2022 ■