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Rehabilitating civilian victims of war through psychosocial intervention in Sierra Leone

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Abstract

This research assessed an intervention (involving drug therapy and psychoeducational counseling) for war trauma in Sierra Leone. We examine the impact of the intervention on symptoms of post-traumatic stress disorder (PTSD) and indicators of intergroup emotions and attitudes. Civilian war victims were drawn from a rehabilitation program (*Intervention*, *N*=50) or a waiting list *Control* group (*N*=50). The rehabilitation program combined general psychiatric treatment with additional life skills support. Those in the *Intervention* group had significantly lower PTSD symptoms and also scored lower on Intergroup Anxiety and Outgroup Blame, than those in *Control*. The intervention had an indirect effect on PTSD symptoms through Intergroup Anxiety. The reduction in PTSD in the intervention was greater for participants with a stronger identification with Sierra Leone.

Recent decades have seen more than their fair share of intergroup conflicts. Nowhere has this been more evident than on the continent of Africa where civil wars in Darfur, Liberia, Rwanda, and Sierra Leone (the context for this research) have been particularly devastating. In addition to the loss of human lives, such conflicts bequeath a lasting legacy of psychological trauma and social division to their survivors (Johnson & Thompson, 2008; Staub, 2006). In an effort to mitigate some of the worst of these consequences, governments and non-governmental organizations (NGOs) in post-conflict zones have implemented a variety of interventions amongst refugees and civilian survivors of war. This article reports an investigation into one such intervention conducted in a hospital in Sierra Leone. It assesses the intervention both in terms of symptoms of post-traumatic stress disorder (PTSD) and some social psychological indicators, especially intergroup emotions and attitudes. It seeks to demonstrate that there are close theoretical and empirical links between the successful clinical treatment of war trauma and various social psychological processes.

While there is evidence on effective treatments for PTSD in Western countries (Bradley, Greene & Russ et al., 2005), less is known about treatments for PTSD in civilians affected by war. In postwar settings, aid organizations often intervene and provide different forms of psychotherapy for traumatized victims. Research evaluating such interventions has primarily focused on psychoeducation, narrative exposure, and counseling interventions (e.g., Neuner et al., 2004, 2008; Staub, Forman, Herbert, & Yuen, 2005; Yeomans, Forman, Herbert, & Yuen, 2010).

A primary goal of psychotherapeutic interventions among war-affected civilians at risk of PTSD is obviously the amelioration of their symptoms. However, a secondary treatment goal will sometimes be to change people's intergroup emotions and attitudes, particularly if those changes will lead to intergroup forgiveness. An enhanced propensity to forgive the perpetrators of violence during the armed conflict may be an important step toward intergroup reconciliation and the social reconstruction of a society after prolonged conflict (Lederach, 1997; Staub, 2006). An issue of theoretical interest, and yet one which has been little studied, is whether the second, social psychological, goal may actually facilitate the achievement of the primary therapeutic goal of reducing PTSD symptoms.

Staub (2006) has argued that interventions to reduce the effects of war trauma should seek to alleviate clinical symptoms while also promoting intergroup forgiveness and reconciliation. The latter may help people to engage with the traumatizing experiences rather than avoid them, as well as reducing their fear and mistrust of others outside their group. Staub's (2006) account is not always clear about the precise causal mechanisms (and their direction) involved in psychoeducational interventions. At times, it implies that social psychological changes (e.g., intergroup forgiveness)

and healing (e.g., reduced PTSD symptoms) may be reciprocally reinforcing and not always separable: "In the course of healing people may come to experience empathy with themselves, which then opens them to empathy with other people. They may also feel less vulnerable and more trusting. This makes the beginning of reconciliation possible. As reconciliation begins, creating further safety and trust, healing can progress" (Staub, 2006, pp. 874; see also, Staub et al., 2005, p. 302). Elsewhere, it is more explicit about the causal role of forgiveness in promoting better mental health, suggesting that the act of forgiving can relieve psychological distress (Staub, 2006, p. 886). Essentially, then, Staub is suggesting that social psychological processes may partially mediate the effects of a therapeutic intervention, and *vice versa*.

In an evaluation of one such intervention conducted in the aftermath of the 1994 genocide in Rwanda, Staub et al. (2005) reported a reduction in trauma symptoms in one of the intervention groups studied, accompanied by an increase in "other orientation" attitudes, a complex amalgam of victimhood, blaming the outgroup and a willingness to forgive the perpetrator group. However, the authors do not report any formal tests of mediation of the effects of the intervention on trauma symptoms via the "other orientation" measure. Other research has also reported negative correlations between PTSD and intergroup reconciliation in conflict zones (Bayer, Klasen & Adam, 2007; Pham, Weinstein, & Longman, 2004). But Doran, Kalayjian, Toussaint, and DeMucci (2011) found no significant relationship between forgiveness and traumatic stress in a small sample of Sierra Leonean citizens. This last study aside, there does seem to be evidence linking intergroup forgiveness attitudes with PTSD although none that we know of that has attempted to examine the possible mediating role of such social psychological processes in the context of a treatment intervention.

However, it is possible that forgiveness may be too large a step for some survivors of intense conflicts to take. Previous studies of intergroup forgiveness in conflict contexts indicate that overall mean levels of intergroup forgiveness are seldom much above the midpoint of standardised scales, and are often below it (e.g., Cehajic, Brown, & Castano, 2008; McLernon, Cairns, Hewstone, & Smith, 2004; Noor, Brown, Gonzalez, Manzi, & Lewis, 2008). In such situations, it may be more realistic to expect that interventions could aspire to change other forms of intergroup emotion and attitude such as intergroup anxiety (Stephan & Stephan, 1985) and outgroup blaming. There is evidence that such intergroup indicators are associated with forgiveness and, moreover, that they can be altered by interventions and life experiences that involve positive forms of contact with members of the outgroup (Brown & Hewstone, 2005). What has been little studied is whether clinically oriented *therapeutic* interventions could bring about similar changes, and whether those changes are statistically related to the therapeutic goals of interest (reduced PTSD symptoms). In this study we examined this issue by including as potential mediators, in addition to forgiveness, intergroup anxiety, and outgroup blame.

Treatment interventions may not be equally effective for all. In line with the arguments advanced above, here we explore the possibility that a social psychological variable might moderate the effectiveness of the PTSD treatment program under evaluation. One promising candidate in this regard may be group membership and its subjective component, group identification. There is a growing literature that suggests that the groups that people belong to and identify with can be an important protective factor in a number of domains of health and well-being (Jetten, Haslam, & Haslam, 2012). According to this "social cure" argument, group membership and hence social identification can act as a "buffer" against adverse life events. Examples of research showing this include: recovering stroke patients (those with multiple group memberships prior to the stroke had better prognoses than those with few memberships, Haslam, Holme, Haslam, Iyer & Jetten, 2008), post-traumatic stress in patients with head or orthopaedic injuries (lower PTSD among those with more group memberships, Jones, Williams, Jetten, Haslam, Harris, & Gleibs, 2012), and well-being among residents of a home for the elderly (residents participating in a group intervention designed to increase water intake showed better physical health and well-being than those with a traditional individual regime, Gleibs, Haslam, Haslam, & Jones, 2011). These examples all involved interacting groups. However, the mere cognitive evocation of multiple groups (as compared to a single group) seems to be able to increase people's ability to endure a painful experience (Jones & Jetten, 2011).

Of course, mere group membership does not automatically imply identification with that group (Tajfel & Turner, 1986). However, in many of the group contexts involved in the above studies, it is probably a reasonable assumption that the groups were, indeed, important for the members and therefore that levels of identification were far from minimal. The same is almost certainly true in the postconflict context of Sierra Leone, where there is now a strong societal emphasis on national reconstruction after the long and divisive civil war. Although group identification processes have been little studied in relation to conflict-induced PTSD, Muldoon and Downes (2007) report that, in a representative survey conducted in Ireland and Northern Ireland, people with PTSD rated their national identity as less important than those without PTSD. In other words, across a wide variety of challenging contexts, people with multiple group memberships (and consequent identifications) seem to be somewhat protected from the usual adverse effects of trauma or may respond better to a treatment intervention.

The mechanisms involved in such "social cure" effects are not yet clear. Some of them may be due to the additional

social support that groups can provide since it is well-known that social support is a protective factor against PTSD and other stresses (Charuvastra & Cloitre, 2008; Ozer, Best, Lipsey, & Weiss, 2008). Nevertheless, the fact that mere category evocation or identification with a large-scale category such as nationality is also correlated with positive health outcomes suggests that additional processes are at work. In the latter case, it is possible that the social benefits of a common ingroup identity may play a role, especially in post-conflict arenas (Gaertner & Dovidio, 2000). To the extent that a superordinate identity (like "nation") becomes salient, the negative social and psychological outcomes associated with the prior intergroup conflict may be lessened. It was this reasoning that led us to speculate that strength of national (Sierra Leonean) identification might moderate the effects of the PTSD intervention.

The research context: Sierra Leone and the mental health, behavioral change, and social inclusion intervention, Makeni

In 1992, the Revolutionary United Front rebel group attacked the capital city of Sierra Leone and sparked a civil war which lasted over a decade. This war was characterized by the use of child soldiers, mutilations, sexual violence, massacres, and mass displacement, resulting in over 50,000 casualities and around 500,000 refugees. While Sierra Leone has since enjoyed a period of relative peace, the psychosocial impact of this war is still evident. It is estimated that in Makeni alone, 10,000 people remain displaced with PTSD (Annual Review, 2009–2010). In 2000, University of Makeni and the Catholic Overseas Development Agency (CAFOD) set up the mental health, behavioral change, and social inclusion program to address the mental health and related behavioral problems caused by the war (Alonso, et al., 2014; Shackman & Price, 2013). The program, which was delivered free of charge as an out-patient service, provided rehabilitation through psychiatric treatment (primarily the use of antipsychotic drugs), psychological counseling, and increasing opportunities for sustainable livelihood. In addition, a core component of the program promoted good relations in the community through reducing social stigma associated with mental illness and changing intergroup attitudes and relations.

Counseling was administered in drop-in centers at Makeni Hospital and allowed patients to deal with symptoms of PTSD and consequent behavioral-related problems, including drug-induced phobias, paranoia, and depression. Typical therapy involved one-on-one sessions with the counselors to discuss participant's symptoms, behavior change techniques, development of problem-solving skills, methods of combating depressive symptoms including administration of drugs, and advice regarding how to manage day-to-day life concerns.

Research goals

This study investigates the psychosocial rehabilitation program in Sierra Leone offered by the University of Makeni and CAFOD from a social psychological perspective. We examine: (1) the effectiveness of the intervention at reducing symptoms of PTSD and changing intergroup emotions, blame and forgiveness; (2) whether changes in intergroup forgiveness, anxiety, and outgroup blame mediate the effect of the intervention on PTSD symptoms; and (3) whether level of national identification moderates the effectiveness of the intervention.

Method

Participants

One hundred participants (67 M, 33 F; mean age 33.47, range 15–65 years) were recruited by staff at the University of Makeni. The sample was 49% Muslim and the remainder Christian or Traditional-Indigenous beliefs. Forty-six percent were married and 65% were unemployed at the time of the study (July, 2011). Participants in the Treatment group ($N = 50$) were part of the treatment program and were recruited at the counseling centre as they attended their sessions. Control group participants ($N = 50$) were on the waiting list for treatment and were recruited from the wards of the Holy Trinity Hospital.

Procedure and measures

Recruitment and data collection was done by four research assistants from the University of Makeni. These assistants were trained by the resident psychologist (Professor Brian Price) to ensure consistency of administration of the questionnaire. Participants were recruited from the clinic and hospital. The study was explained and participants told they had the right to withdraw from the study at any point and that their answers would be confidential and anonymous. Questionnaire measures were administered in either English or Krio. For the Intervention group, the questionnaires were administered after at least 6 months of their treatment program had elapsed. Participants were subsequently debriefed. The study was conducted in accordance with ethical guidelines established by the British Psychological Society.

Intervention

The intervention was designed to reduce symptoms of PTSD and consequent behavioral problems, to reduce stigma associated with mental health problems and to change intergroup emotions and attitudes. The intervention comprised pharmacological treatment and brief psychological intervention (the latter lasting typically from between 30 and 45 minutes per

session, depending on the severity of the case) and was delivered by trained health care workers integrated into the existing health care system, combining a biomedical model with advanced Westernized counseling techniques, adapted for the Sierra Leonean cultural context (Alonso et al., 2014; Shackman & Price, 2013). A wide range of conditions were treated and comorbidity was common. Schizophrenia and bipolar disorder were treated with first-generation antipsychotic drugs and adjuvant psychosocial treatment. Generic selective serotonin reuptake inhibitors or tricyclic antidepressants were used for depression. Medication was administered by the nurse, initially for 3 days and a family member of the patient was given the responsibility of medication administration. If no severe adverse effect was detected, medication was provided for a maximum period of 1 month. All patients were asked to attend for a monthly follow-up assessment. Concurrently, sociobehavioral counseling was administered in drop-in centers at Makeni Hospital which allowed patients to address behavioral-related symptoms of PTSD, including drug-induced phobias, paranoia, and depression. Brief psychological interventions for coping with mental illness was offered to patients and their caregivers by two counselors trained in crisis counseling, active listening, problem solving, and promotion of treatment adherence.

A combination of socioeducation techniques was used to challenge negative social behavior as a result of PTSD, such as negative thoughts toward the out-group, fear and anxiety toward the future, depression, flashbacks, nightmares, hyperarousal as a result of remembering the trauma and difficulty concentrating on work. Therapy usually involved personal sessions with the therapist to discuss symptoms, ways of combating symptoms of depression, including drug administration, and advice for coping with everyday life problems. The counselors also advised patients on how to solve problems they encountered while rehabilitating into their family lives, including how to challenge negative thoughts when patients were abandoned by family members due to their illness. Negative thoughts toward the out-groups were challenged with positive statements. For example, when referring to the war counselors used the lay term "forgive and forget." The counselors also worked with the patients' family members to change their perception of mental health by explaining patients' symptoms to them to reduce stigma about mental health. Patients that demonstrated constant improvement in their results were referred to partner NGOs to access training and future employment.

In summary, the intervention comprised an integrated package of psychiatric treatment, psychosocial counseling, and general life skills assistance. The duration of the intervention varied from patient to patient according to their symptoms but typically lasted for about 6 months (SD = 8.2; range 0–42; Alonso et al., 2014). No incentives were given to patients for participating in the program.

Measures

All the following measures were answered on a Likert type scale anchored by "Not at all" =1 and "Very Much" = 5), unless otherwise indicated.

PTSD was measured using a shortened version of the Impact of Events Scale-Revised (IES-R; Weiss & Marmar, 1996). The scale was adapted so participants indicated PTSD symptoms in relation to traumatic events during the civil war. To ensure the scale was culturally valid, seven items were removed which were not culturally relevant or psychometrically coherent in this sample. The final 15 item scale included 6 re-experiencing items, 3 avoidance items, and 6 hyperarousal items (Cronbach's $\alpha = 0.89$).

Intergroup anxiety was measured by asking participants to imagine a situation in which they were interacting with a rebel and to respond to how they might feel (Stephan & Stephan, 1985). Six emotion words were used: relaxed (reversed), threatened, awkward, safe (reversed), nervous, and anxious. A mean score of these six items was computed ($\alpha = 0.86$).

Out-group blame was measured with the mean of two items: "I think that the rebels are entirely to blame for what they have done during the war" and "I think that the rebels are responsible for everything they did" ($\alpha = 0.81$).

Intergroup forgiveness was assessed with the mean of two items: "I think my group should reach out to the rebels and forgive them what they have done"; "I should forgive the rebels their misdeeds" ($\alpha = 0.60$).

In-group (National) identification was measured using the mean of two items: "I am proud to be a Sierra Leonine"; "I have very strong ties with Sierra Leone" (Brown et al., 1986); ($\alpha = 0.76$).

Out-group contact with rebels was measured with a single item: "I have regular contact with the rebels."

Personal war trauma experience was measured with a checklist of 5 items describing different trauma experiences: (1) "I have seen dead people," (2) "I have lost people of my family in the war," (3) "I was attacked," (4) "I have seen how people were killed," and (5) "I have been fighting" (Feuchte, 2010).

Results

Data analysis

The equivalence of Treatment and Control groups was established by two-sample t and χ^2 tests, with additional inspection of effect sizes (and their confidence intervals). The analysis of the effects of the intervention was performed by Multivariate Analysis of Covariance (MANCOVA), followed by univariate Analysis of Covariance (ANCOVA) tests, controlling for background variables (gender, age, marital, and

Table 1 Comparability of Treatment and Control groups

Variable	Control (SE)	Treatment (SE)	Test	*p*	Effect size (*r*) [95% CI]
Age (years)	34.5 (1.85)	32.4 (1.31)	$t(98) = 0.94$	.35	−.09 [−.28, .11]
War Trauma	0.63 (0.05)	0.74 (0.04)	$t(98) = -1.96$	.05	.19 [−.01, .37]
Contact	2.62 (0.21)	1.64 (0.19)	$t(98) = 3.50$	<.01	−.33 [−.50, −.14]
Sex (% M)	64	70	χ^2 =(1, *N*=100)=0.41	.52	−.05 [−.25, .15]
Employment (% unemployed)	66	64	χ^2 =(1, *N*=100)=0.01	.94	−.01 [−.21, .19]
Marital Status (% married)	50	42	χ^2 =(1, *N*=100)=0.64	.42	−.08 [−.28, .12]
Religion (% Muslim)	44	54	χ^2 =(1, *N*=100)=1.00	.32	−.10 [−.29, .10]

Table 2 Effects of the Intervention: Estimated Marginal Means (SE) of All Outcome Variables

	Treatment (n=48)	Control (n=50)	Univariate F(1, 89)	*p*	Partial Eta Squared
PTSD (IES)	1.67 (0.10)	2.91 (0.10)	69.96	<.01	0.44
Forgiveness	3.13 (0.18)	2.99 (0.17)	0.28	.60	0
Intergroup Anxiety	2.54 (0.17)	3.52 (0.16)	16.42	<.01	0.16
Outgroup Blame	2.51 (0.20)	3.59 (0.20)	13.82	<.01	0.13

Note. MANCOVA analysis loses 2 *df*, because it was run under list-wise deletion (the Employment variable has only 98 valid cases). Univariate *F* test are reported here.

employment status, religion, prior trauma and outgroup contact). To investigate potential mediation and moderation of those intervention effects, multiple regression was used, first entering background variables, then the effects of the intervention (coded 0, 1), then the potential mediators, or moderator and interaction term.

Comparability of treatment and control group

Table 1 reports demographic variables, prior trauma and amount of contact with the (rebel) outgroup for participants in both groups. There were no significant differences between the groups except that the Treatment group reported less contact with the outgroup and more prior trauma than the control group (and the latter works against finding an effect due to the Treatment). Confidence intervals indicate that the two groups were equivalent on everything except Contact with the outgroup and Prior Trauma. Nevertheless, as an additional precaution since it is not a randomized design, all these variables were controlled for in subsequent analyses.

Effects of the intervention

The effect of Treatment on the main outcomes is shown in Table 2. There was a significant effect of the intervention on PTSD symptoms (IES), intergroup anxiety and outgroup blame, but not on forgiveness. The magnitude of the effect on IES ($\eta_p{}^2 = 0.44$) is relatively large.

Indirect effects

Potential mediation of the intervention's effect on PTSD by intergroup anxiety and outgroup blame was examined using multiple regression (Tables 3 and 4). None of the control variables was related to PTSD (all βs < 0.16, ns), with the exception of contact with the outgroup ($\beta = 0.27$, $p < .01$). Consistent with the previous analyses, Treatment had a significant effect on PTSD in step 2 ($\beta = -0.66$, $p < .01$) and, consistent with a mediation hypothesis, the beta for this effect reduced (to -0.44, $p < .01$) when the mediators of intergroup anxiety ($\beta = 0.42$, $p < .01$) and outgroup blame ($\beta = 0.16$, $p < .05$) were added to the model. Shrout & Bolger's (2002) bootstrapping procedure in MPLUS established that this indirect effect was reliable, but only through intergroup anxiety ($\beta = -0.17$, b=−0.31, SE = 0.10, $p = 0.001$; CI95% [−0.57, −0.15]) (Table 5). The final model explained 63% of the variance in PTSD.

Moderation effects

Finally, to examine if the effect of the intervention was moderated by national identification, another regression model was tested. To preserve degrees of freedom, we reduced the set of covariates included in our regressions, given our previous results indicating that they exerted little effect on PTSD.[1] We used Preacher, Rucker, & Hayes (2007) Model 2 specification to jointly address the estimation of moderation and mediation effects. The overall estimated model is depicted in Figure 1. Using MPLUS, we estimated standard errors and confidence 95% intervals with bias corrected bootstrapping. In Table 6, unstandardized estimates are displayed. None of[1] the factors had

[1]Moderation analyses were conducted with and without covariates and no substantial change of the estimates was observed.

Table 3 Pearson Correlations, Means, and Standard Deviations of Variables

		1	2	3	4	5	6	7	8	9	10	11	12	13
1.	Age	–												
2.	Sex	−0.12	–											
3.	Married	0.53**	−0.05	–										
4.	Employ	0.23*	−0.10	0.25*	–									
5.	Religion	−0.02	0.01	−0.02	−0.12	–								
6.	War Trauma	−0.07	0.13	−0.16	−0.18	0.07	–							
7.	Contact	0.07	−0.06	0.04	−0.03	0.37**	−0.15	–						
8.	Intervention	−0.09	−0.06	−0.08	−0.01	−0.10	0.19	−0.33**	–					
9.	Intergroup Anxiety	0.00	0.17	−0.03	−0.17	0.01	0.02	0.10	−0.39**	–				
10.	Victim Blame	0.20*	−0.05	0.12	0.01	0.11	−0.10	0.26**	−0.43**	0.30**	–			
11.	Forgiveness	−0.07	−0.01	0.00	0.05	0.15	−0.08	0.20	−0.03	−0.40**	0.01	–		
12.	National Identity	0.17	0.04	0.07	0.01	0.16	0.03	0.02	0.00	−0.03	0.08	0.16	–	
13.	PTSD (IES)	0.13	0.05	0.01	−0.08	0.11	−0.15	0.31**	−0.70**	0.62**	0.50**	−0.08	0.00	–
	Mean	33.47	0.33	0.46	0.34	0.51	0.69	2.13	0.50	3.05	3.04	3.04	4.48	2.29
	Std. Deviation	11.36	0.47	0.50	0.48	0.50	0.30	1.47	0.50	1.20	1.45	1.17	0.93	0.93

Notes. ** $p<.01$ * $p<.05$.

Table 4 Standardized regressions coefficients on PTSD (IES)

	Step 1	Step 2	Step 3	Step 4	Step 5
Covariates					
Age	0.19	0.14	0.11	0.12	0.16*
Sex (female=1)	0.09	0.02	−0.02	−0.02	−0.02
Married (married=1)	−0.09	−0.10	−0.10	−0.10	−0.10
Employ (employed=1)	−0.11	−0.09	−0.03	−0.03	−0.07
Religion (non-Muslim=1)	0.01	0.01	0.02	0.03	0.01
War Trauma	−0.14	−0.04	−0.06	−0.06	−0.06
Contact	0.27*	0.07	0.04	0.04	0.03
Intervention					
Treatment (treated=1)		−0.66**	−0.44**	−0.43**	−0.46**
Mediation					
Intergroup Anxiety			0.42**	0.42**	0.45**
Victim Blame			0.16*	0.16*	0.08
Forgiveness			0.07	0.07	0.10
Moderator					
National Identity				−0.04	0.13
National Identity × treatment					−0.27**
R^2	0.07	0.47	0.63	0.63	0.67
ΔR^2		0.40	0.16	0.00	0.04
F	2.08	11.96	16.28	14.83	16.25
df	7	8	11	12	13

Notes. ** $p<.01$ * $p<.05$. All covariates were centered to the grand mean, with the exception of the dummy covariates.

Table 5 Standardized Estimated Parameters, Unstandardized Estimates, Standard errors, with Bootstrap Bias Corrected Confidence Interval, for Direct and Indirect Effects of the Treatment, on PTSD (IES)

				95% CI Bias-corrected	
	β	*b*	SE	LL	UL
Direct Effect	−0.44**	−1.26	0.15	−1.56	−0.97
Indirect Effect	−0.24**	−0.44	0.13	−0.74	−0.24
Total Effect	−0.67**	−0.82	0.15	−1.11	−0.52
Indirect effects Through					
Outgroup Blame	−0.07	−0.13	0.08	−0.32	0.00
Forgiveness	0.00	−0.00	0.02	−0.05	0.03
Intergroup Anxiety	−0.17**	−0.31	0.10	−0.57	−0.15

Notes. Estimated effects with control variables at Step 3 (see Table 3 covariates). ** $p<.01$ * $p<.05$.

significant effects to account for intergroup anxiety, apart from Treatment ($b= -0.94$, $p<.01$). In contrast, Treatment ($b=-0.99$, $p<.01$), National Identity ($b=0.17$, $p<.05$) and Anxiety ($b=0.33$, $p<.01$) all had direct positive associations with PTSD. The interaction term of National Identity and Treatment was significant ($b= -0.45$, $p<.01$), thus indicating the effect of the treatment is conditional on levels of national identification. Deconstructing this interaction showed that the slope for the intervention was $b = -1.41$ CI95% [−1.75, −1.08] among high identifiers (+1SD), but only $b = -0.57$ CI95% [−0.86, −0.25] among low identifiers (−1SD). However, the index of moderated mediation yielded a nonsignificant result, $b = 0.06$, CI 95% [−0.13, 0.21]. This suggests that, although the direct effects of the Intervention were qualified by Identity, the mediation via intergroup anxiety was not. Finally, a reversed model was fitted in which PTSD was specified as the mediator, Anxiety as the outcome, and National Identity was kept as the moderator. Our original model accounted for 68% of the variance in PTSD and 16% of Anxiety, whereas the reversed alternative accounted

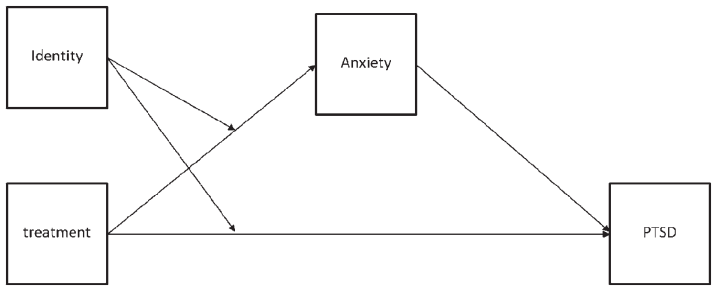

Figure 1 Conceptual model of joint effects of mediation and moderation.

Table 6 Unstandardized Estimated Parameters, with Bootstrap Bias Corrected Errors, for Moderation of Treatment Effects on PTSD (IES)

	Anxiety		PTSD	
	b	SE	*B*	SE
Intercept	0.47[a]	(0.15)	0.50[b]	(0.09)
Treatment	−0.94[a]	(0.22)	−0.99[a]	(0.13)
Anxiety	–		0.33[a]	(0.05)
National Identity	−0.10	(0.13)	0.17[a]	(0.06)
Treatment*Identity	0.19	(0.29)	−0.45[a]	(0.11)
R^2	0.16		0.68	

Notes. Anxiety, PTSD, and National Identity were centered at the grand mean.
[a]$p<.01$
[b]$p<.05$.
[1]Moderation analyses were conducted with and without covariates and no substantial change of the estimates was observed.

for only 52 and 42% of the variance of PTSD and Anxiety respectively. Given our aim was to account for PTSD as criterion, we preferred our original model specification.

Discussion

This study shows that the therapeutic program offered by Makeni Hospital for war-induced PTSD was associated with reduced PTSD symptoms as measured by the IES scale, reduced intergroup anxiety and outgroup blame but not forgiveness. Changes in intergroup anxiety partially mediated the effect of the intervention, and the treatment effects were stronger for patients with high levels of national identification than for those for whom their national identity was less important.

These findings are consistent with the wider psychosocial goals of the intervention and support Staub's (2006) contention that clinical and social psychological outcomes should be considered simultaneously when devising and evaluating treatment programs for war trauma. It is noteworthy that the treatment was not associated with changes in participants' intergroup forgiveness, and nor was forgiveness related to PTSD. This is not consistent with other findings on the relationship between war-related PTSD and forgiveness (e.g., Bayer et al., 2007; Pham et al., 2004), but a previous study in Sierra Leone also failed to find such a relationship (Doran et al., 2011). Perhaps the still fraught intergroup context in Sierra Leone is one in which it may be too much to expect psychoeducation programs to elicit significant forgiveness from participants. Nevertheless, the indirect effect of the Intervention via intergroup anxiety supports Staub's more general argument that effective psychosocial interventions for war-induced trauma will involve changes at a social psychological level alongside reduction in clinical symptoms. Although this is only a correlational design with limited potential for causal inference, it may be significant that the mediation seemed to be through intergroup anxiety to PTSD rather than *vice versa*; the alternative mediation model (through PTSD to intergroup anxiety) explained less of the variance in PTSD.

The fact that a strong national identification appeared to enhance the benefits of the treatment program is also important and reinforces the connection between clinical and social psychological variables in this intervention. The finding that the intervention's outcomes were moderated by a social identity variable is consistent with the general "social cure" argument (Jetten et al., 2013). And as the group in this instance was the relatively abstract concept of the "nation," this indicates that "social cure" effects may be observed not only in interacting face-to-face groups, but may also be instigated by a more cognitive categorical evocation, as Jones and Jetten (2010) have also suggested. If this is the case, it suggests that treatment programs for PTSD and other war-trauma conditions might benefit by fostering people's identifications with some superordinate category; here it was the "nation," but other categories could serve the same function (Gaertner & Dovidio, 2000).

The main limitations of this study are that it was not a randomized design and it did not have pretreatment measures of outcome variables. Neither of these was practically possible in the challenging research context we were confronted with. The second best alternative was to employ a "waiting list" design which, it was hoped, would

provide some measure of comparability between the Treatment and Control groups. So it proved, on all but two indices (of the seven measured). Results may therefore be due to pre-existing group differences, namely amount of contact with rebels and prior trauma experience. However, although the Treatment group had less contact with the rebels than the Control group, the effect of this on PTSD disappeared once the intervention variable was controlled for. Thus, it is unlikely that the difference in contact with rebels totally explains the treatment effect found. Nevertheless, statistical control is a poor substitute for a true experimental design, especially as there may have been other unmeasured differences between the groups. The lack of pretest measures, often desirable in nonexperimental or quasiexperimental designs, was also a weakness. As researchers, we were given only a very narrow time window to conduct the study and the collection of baseline data simply was not feasible. Clearly, a more powerful future study would employ random allocation to treatment and control groups and, in the absence of this, at least pretest measurement. Such designs are sometimes possible in postconflict settings (e.g., Neuner et al., 2008; Yeomans et al., 2010). Such future research would also do well to investigate the possible mechanisms underlying the "social cure" effect that we observed. At present, it is not clear why the evocation of or identification with social categories seems to provide people with more resilience (Jones & Jetten, 2010). Does it increase their general well-being, or enhance their sense of self-efficacy? These are questions to which future researchers may wish to address themselves.

In summary, this research provides supportive evidence for psychosocial approaches to PTSD treatment in civilians affected by war, and illustrates the importance of combining conventional clinical treatments with psychosocial interventions and of considering the effects of social factors, such as intergroup anxiety.

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