

Intervening on Persistent Posttraumatic Stress Disorder: Rumination-Focused Cognitive and Behavioral Therapy in a Population of Young Survivors of the 1994 Genocide in Rwanda

Vincent Sezibera, PhD

National University of Rwanda, and Catholic University of Louvain, Belgium

Nady Van Broeck, PhD

Pierre Philippot, PhD

Catholic University of Louvain, Belgium

This study assessed the outcome of a brief rumination-focused cognitive and behavioral intervention in treating posttraumatic stress disorder (PTSD) symptoms among Rwandan adolescent survivors of the 1994 genocide. All participants (54.5% female, $N = 22$) aged between 15 and 18 years ($M = 16.55$, $SD = 0.96$) met criteria for PTSD as assessed by the PTSD self-rating scale (UCLA PTSD index). Measures included questionnaires assessing PTSD, depression, and somatization. Data were obtained at four points: (1) 11 years after the genocide (baseline), (2) 13 years after the genocide (pretreatment), (3) posttreatment (2 weeks after the treatment), and (4) follow-up (2 months after the treatment). PTSD symptoms increased between baseline and pretreatment. The intervention was associated with a reduction in PTSD symptoms, with gains maintained at follow-up.

Keywords: children; adolescents; genocide; PTSD; intervention; Rwanda

In their cognitive model of posttraumatic symptomatology, Ehlers and Clark (2000) distinguish three types of subjective factors accounting for the persistence of posttraumatic stress disorder (PTSD). First, negative evaluations (“added meanings”) of the trauma and/or its consequences or aftereffects (intrusions, hyperarousal) drive the impression of continuous threat. These evaluations maintain the intrusions together with the physical sensations of malaise, which in turn trigger mechanisms of rumination (Behar, Zellig, & Borkovec, 2005; Borkovec, Newman, & Castonguay, 2003). Second, the nature of the memory of the trauma (difficulty in cognitive integration of the trauma) explains the establishment and persistence of intrusions, which later create sensitive triggers for the rumination. Third, apprehensive evaluations motivate a set of behaviors (e.g., avoidance) and dysfunctional cognitive strategies (e.g., thought suppression, rumination) intended at reducing

the feeling of current threat. However, instead of reducing symptoms, these factors actually maintain the disorder by preventing changes in the apprehensive evaluations and in trauma memory.

Ehlers and Clark's (2000) model has been recently extended in a metacognitive model (Wells & Sembi, 2004). The latter model particularly stresses metacognitive processes, mainly anxious rumination, that hinder the normal process of adaptation to trauma. It postulates that the alleviation of anxious ruminations and of interpretative and attentional biases on one hand, and the strengthening of metacognitive flexibility on the other hand, should foster more adaptive cognition and alleviate symptoms. Clinical findings indeed suggest that rumination-focused interventions may reduce and alleviate PTSD symptoms (Ehlers & Clark, 2000). More generally, clinical evidence (Segal, Williams, & Teasdale, 2006) suggests that the more successfully clients can disengage from rumination and avoidance, the more effective they can be in regulating their feelings and resolving their problem.

This article presents a study conducted in Rwanda with a sample of young survivors of the 1994 genocide. It assessed the effects of rumination-focused cognitive behavioral therapy (RFCBT) in treating persistent PTSD and associated disorders such as depression and somatization. Previous data collected 12 years after the genocide (Sezibera & Philippot, 2009) revealed a high prevalence of PTSD symptoms in a large sample of this population ($N = 232$; PTSD prevalence: 71.6%). Consistent with existing findings (Michael, Halligan, Clark, & Ehlers, 2007), our later data indicated that ruminative coping strategy was the best predictor of PTSD symptoms ($\beta = 0.47$, $t = 7.80$, $p < 0.001$), though other coping strategies, including problem solving, cognitive restructuring, expressing emotions, and seeking social support, were not significant predictors. Likewise, PTSD was strongly associated with depression ($r[225] = .59$, $p < .001$) and somatization ($r[225] = .59$, $p < .001$).

This evidence together with the theoretical rationale of Ehlers and Clark's model (2000) suggest that an intervention targeting the nature and content of rumination should reduce PTSD symptoms. In addition, previous research (Nolen-Hoeksema, 2000; Watkins et al., 2007) indicates that rumination-focused interventions should also be effective in alleviating depressive symptoms, which commonly occur in the aftermath of trauma (Thabet, Abed, & Vostanis, 2004).

The present study adopted a within-subject design. The natural evolution of PTSD symptoms was observed 2 years before (baseline) and just before the intervention (pretreatment). Then, symptoms were assessed after the intervention (posttreatment) and at a 2-month follow-up.

METHOD

Participants

In September 2005 (baseline), 11 years after the genocide in Rwanda, PTSD prevalence was assessed in a large population of orphans of the genocide ($N = 232$). A significant portion of them (71.6%) met *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV)* criteria for a diagnosis of PTSD (American Psychiatric Association, 1994). Two years later, individuals with a PTSD diagnosis at baseline were searched and contacted to participate in the present study. At the pretreatment assessment (February 2007), of the 166 individuals who had received a PTSD diagnosis at baseline, 22 (12 girls) could be located and agreed to take part in the study. The localization of potential participants was particularly difficult given that, in the Rwandan school system, children are reallocated to different schools after their third year of secondary school. At pretreatment, the 22 located participants still all satisfied PTSD diagnosis criteria. They were aged between 15 and 18 years ($M = 16.55$, $SD = 0.96$). Participants were recruited from high school of survivors' association of the genocide (Association of the Students Survivors of the Genocide). Inclusion criteria consisted of meeting PTSD diagnostic criteria at baseline and pretreatment and willingness to attend therapeutic sessions. None of the participants who could be located refused to take part in the study.

Measures

At each assessment (baseline, pretreatment, posttreatment, and follow-up) questionnaires were administered to the participants. They were presented in *Kinyarwanda*, the participants' native language, and were completed in a group session in the presence of the experimenter, who assisted participants by individually answering any question raised. The questionnaire package included the questionnaires in the following paragraphs.

PTSD was assessed with the UCLA PTSD index (Pynoos, Rodriguez, Steinberg, Stuber, & Frederick, 1998), which is a 17-item measure of the frequency of PTSD symptoms. The index showed satisfactory internal consistency ($\alpha = .77$ at pretest and $\alpha = .91$ at posttreatment) in its *Kinyarwanda* version. This version was constructed on the basis of several independent translations by Rwandese experts and Rwandese psychology students of the English version of the questionnaire. Any difference in translation was discussed and resolved.

The Brief Symptom Inventory subscales (Derogatis & Melisaratos, 1983) were used to assess symptoms of depression (6 items, $\alpha = .80$) and somatization (7 items, $\alpha = .84$). The depressive symptoms assessed were suicidal ideation, persistent depressive mood, feelings of solitude and loneliness, pessimism and despair with regard to the future, and self-depreciation. Somatization symptoms assessed were shortness of breath, nausea or stomach troubles, dizziness or fainting, or chest pains.

Treatment Protocol

Participants received up to 10 weekly sessions, with a duration of 2 hours maximum. Based on the protocols of Borkovec (Borkovec et al., 2003) and Watkins (Watkins & Baracaia, 2002), a rumination-focused intervention protocol was adapted for this population. The protocol was constructed according to the following rationale, which integrates the key processes of Ehlers and Clark's (2000) and Wells and Sembi's (2004) models. After a session of psychoeducation on PTSD, participants were invited to re-evoked traumatic experiences and to identify their reactions when confronted with the trauma and coping strategies they spontaneously used. Then the treatment focused on rumination that was functionally analyzed; more adaptive alternatives were provided and trained. Specifically, it included (a) psychoeducation about trauma and posttraumatic stress symptoms, (b) narrative exposure to trauma reminders (in-session exercises), (c) identification of cognitions, emotions, and emotional-driven behaviors associated with the traumas of the genocide, (d) analyzing the coping strategies used when anxious and/or distressed, (e) analyzing the function and effectiveness of the rumination strategy, (f) identifying and testing alternatives on rumination experiences. To enhance rumination control, the following weekly homework exercises were given to participants: (a) attempting exposure to trauma reminders (in vivo and in imagination), (b) identifying and challenging avoidant strategies (distraction, isolation, withdrawing from the reminders, and other subtle behaviors), (c) monitoring anxiety and depression signals, (d) following up coping strategies used naturally when distressed and/or depressed, (e) challenging rumination function (participant monitoring the duration and effectiveness of the rumination benefit), (f) participating in exercises on alternative strategies to rumination (e.g., disclosure and social sharing of emotions). Participants were encouraged to identify intrusive thoughts, to consider alternatives to intrusion and associated rumination, and to test the probability that the thoughts corresponded to reality. All sessions were organized in groups of five or six participants taking place in the school setting.

RESULTS

Maintenance of PTSD Symptoms Over Time

Descriptive statistics are reported in Table 1. All participants presented the full range of PTSD symptoms at baseline (Time 1) and pretreatment (Time 2). This attests that participants didn't

TABLE 1. DESCRIPTIVE STATISTICS OF DEPENDENT VARIABLES AT EACH ASSESSMENT POINT

	Baseline (<i>N</i> = 22)		Pretreatment (<i>N</i> = 22)		Posttreatment (<i>n</i> = 22)		Follow-Up (<i>n</i> = 18)	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Intrusions subscale	2.28	0.50	2.91	0.71	1.70	0.61	1.61	0.66
Avoidance subscale	2.08	0.43	2.52	0.53	1.62	1.05	1.46	0.76
Arousal subscale	1.82	0.39	2.44	0.80	1.49	0.85	1.46	1.03
PTSD total score	2.06	0.22	2.61	0.61	1.60	0.80	1.50	0.74

recover from PTSD in spite of the 2 years elapsed. Paired *t*-tests conducted on the PTSD index between Times 1 and 2 indicated an increase in symptom frequency at Time 2 compared to Time 1, $t(21) = 4.44$, $p < .001$; $M(SD) = 2.61 (0.61)$, $M(SD) = 2.06 (0.22)$, respectively.

Association of PTSD, Depression, and Somatization

Assessing PTSD and comorbid disorders association, bivariate and partial correlations were calculated at all times of measurement (see Table 2). Positive and significant correlations between PTSD, depression, and somatization were observed. Further, partial correlations between PTSD and depression are maintained when controlling for somatization at the pretest, $r(19) = .89$, $p < .001$, the posttreatment, $r(19) = .77$, $p < .001$, and the follow-up, $r(15) = .80$, $p < .001$. However, partial correlations between PTSD and somatization are no longer significant when controlling for depression.

Treatment Outcome

An analysis of variance (ANOVA) with gender as between-subjects factor and time (pre- vs. posttreatment) as within-subject factor revealed a main effect of time in reducing the frequency of PTSD symptoms, $F(1, 20) = 23.57$, $p < .001$, *partial* $\eta^2 = .54$, whereas no gender main effect or interaction was observed, $F < 1$. Entered as covariate, no significant effects of the age were observed ($p > .05$). Regarding PTSD diagnostic criteria, 18.2% of the participants ($N = 22$) no longer met all diagnostic criteria for PTSD at the posttreatment, and this improvement was maintained at the 2-month follow-up (17%, $N = 18$). Also, the number of participants displaying the full range of PTSD symptoms (17 symptoms) decreased after the intervention. Thus, 45.5% of subjects presented all 17 symptoms at Time 2, but this number was reduced at Time 3 (22.7%) and Time 4 (5.6%). The intervention didn't significantly impact either depression, $F(1, 21) = 2.91$, $p > .05$, *partial* $\eta^2 = .12$, or somatization, $F(1, 21) = 2.97$, $p > .05$, *partial* $\eta^2 = .12$.

TABLE 2. CORRELATIONS AMONG PTSD, DEPRESSION, AND SOMATIZATION SYMPTOMS

	PTSD		
	Pretest (<i>N</i> = 22)	Posttest (<i>N</i> = 22)	Follow-Up (<i>N</i> = 18)
Depression	.92***	.80***	.86***
Somatization	.57**	.44**	.55*

* $p < .05$. ** $p < .01$. *** $p < .001$.

DISCUSSION

The present data reveal that PTSD symptoms were exacerbated during the 2 years separating the first evaluation from the beginning of the psychological intervention. This is particularly remarkable, given that these evaluations took place 11 and 13 years after the genocide. This observation is congruent with previous reports. For example, in a sample of 68 surviving teenagers of the genocide in Rwanda (aged between 13 and 23 years), Schaal and Elbert (2006) found that 44% of their sample met *DSM-IV* criteria for PTSD 10 years after exposure to the traumatic events. Similarly, in a study on Holocaust survivors, Amir and Lev-Wiesel (2003) showed that, 55 years later, survivors of the Holocaust had very high scores on symptoms of PTSD, depression, anxiety, somatization, and anger-aggressiveness, as compared to a control group. In the Rwandese case, the long-term exacerbation of PTSD symptoms is likely due to an ongoing process of retraumatization: Survivors are regularly confronted by presumed genocide perpetrators and killers of their relatives. This situation feeds a feeling of injustice and of insecurity. It is to be noted that our study is the first to use a longitudinal design with Rwandese genocide survivors; all previous studies used cross-sectional designs. The present study is thus the first to document that in this population, not only do PTSD symptoms remain high over long periods of time, but they also worsen.

Regarding the intervention, results from the present study suggest that a brief cognitive and behavioral intervention targeting rumination and cognitive avoidance is associated with a reduction in PTSD symptoms. Indeed, a clear decrease in PTSD symptoms was observed between pre- and postintervention. Given that the natural course of the symptoms, observed between early baseline and preintervention, was to increase, and given that no historical or other factors have occurred during the intervention, this sharp diminution in symptoms can probably be attributed to the intervention. This effect is remarkable for several reasons. It occurred (a) irrespective of age or gender, (b) after only 10 sessions, and (c) in a population with no cultural background or expectation regarding psychotherapy. Further, these improvements were fully maintained at follow-up. Still, the symptomatology was not totally eradicated, and even if a diminution of symptoms intensity was observed in most participants, a significant number of them still met criteria for PTSD at the end of treatment. In sum, although it cannot claim to be a complete treatment for PTSD, the present intervention seems to be a promising and cost-effective procedure to diminish PTSD symptoms in the context of a multitraumatized population.

Surprisingly, the intervention did not reduce depressive or somatization symptoms. This observation diverges from studies that have shown a significant effect of rumination-focused treatment on depression (e.g., Watkins & Baracaia, 2002). However, the present intervention was shorter in duration (10 sessions) and conducted in a group format, though other studies addressed individual interventions. More importantly, the present study addressed a population with a primary diagnosis of PTSD rather than depression. The course of depression might be different in this multitraumatized population compared to a depressed population without traumatic experience. Indeed, Sack, Him, and Dickason (1999) observed that PTSD and depression followed different paths over time in a population of Khmer adolescents who survived Pol Pot regime mass killings. They offered two interpretations to their findings: Either PTSD symptoms would be related to earlier trauma while depression would be linked to recent life difficulties or stressors (Sack, Clarke, & Seeley, 1996), or the co-occurrence of PTSD and depression may complicate and weaken treatment (Campbell et al., 2007). In any case, together with former observations, our results suggest that a longer intervention might be needed to decrease depressive symptoms in the present population.

LIMITATIONS

The present protocol, although focusing on rumination, included other potentially active factors such as psychoeducation, narrative exposure, and group support. Future research is needed to

establish the specific ingredients involved in the therapeutic outcome. Also, randomized, controlled studies are needed to more rigorously evaluate the treatment. Finally, the present results raise questions about the nature of the relation between PTSD and depression that need to be addressed in future research.

Despite its limitations, this study has special interest in the posttraumatic context of Rwanda, especially for the population of multitraumatized young survivors. Existing studies with survivors of the genocide in Rwanda are restricted to the evaluation of the prevalence rate of PTSD but did not monitor the persistence of PTSD symptoms over time, nor did they test ways of reducing PTSD.

REFERENCES

- American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: Author.
- Amir, M., & Lev-Wiesel, R. (2003). Time does not heal all wounds: Quality of life and psychological distress of people who survived the Holocaust as children 55 years later. *Journal of Traumatic Stress, 16*, 295–299.
- Behar, E., Zullig, A. R., & Borkovec, T. D. (2005). Thought and imaginal activity during worry and trauma recall. *Behavior Therapy, 36*, 157–168.
- Borkovec, T. D., Newman, M. G., & Castonguay, L. G. (2003). Cognitive-behavioral therapy for generalized anxiety disorder with integrations from interpersonal and experiential therapies. *CNS Spectrums, 8*, 382–389.
- Campbell, D. G., Felker, B. L., Liu, C. F., Yano, E. M., Kirchner, J. E., Chan, D., et al. (2007). Prevalence of depression-PTSD comorbidity: Implications for clinical practice guidelines and primary care-based interventions. *Journal of General Internal Medicine, 22*, 711–718.
- Derogatis, L. R., & Melisaratos, N. (1983). The Brief Symptom Inventory—an introductory report. *Psychological Medicine, 13*, 395–405.
- Ehlers, A., & Clark, D. M. (2000). A cognitive model of posttraumatic stress disorder. *Behaviour Research and Therapy, 38*, 319–345.
- Michael, T., Halligan, S. L., Clark, D. M., & Ehlers, A. (2007). Rumination in posttraumatic stress disorder. *Depression and Anxiety, 24*, 307–317.
- Nolen-Hoeksema, S. (2000). The role of rumination in depressive disorders and mixed anxiety/depressive symptoms. *Journal of Abnormal Psychology, 109*, 504–511.
- Pynoos, R., Rodriguez, N., Steinberg, A., Stuber, M., & Frederick, C. (1998). *The UCLA PTSD Reaction Index for DSM-IV (Adolescent version)*. Los Angeles: UCLA Trauma Psychiatry Service.
- Sack, W. H., Clarke, G. N., & Seeley, J. (1996). Multiple forms of stress in Cambodian adolescent refugees. *Child Development, 67*, 107–116.
- Sack, W. H., Him, C., & Dickason, D. (1999). Twelve-year follow-up study of Khmer youths who suffered massive war trauma as children. *Journal of the American Academy of Child and Adolescent Psychiatry, 38*, 1173–1179.
- Schaal, S., & Elbert, T. (2006). Ten years after the genocide: Trauma confrontation and posttraumatic stress in Rwandan adolescents. *Journal of Traumatic Stress, 19*, 95–105.
- Segal, Z. V., Williams, J. M. G., & Teasdale, J. D. (2006). *La thérapie cognitive basée sur la pleine conscience pour la dépression. Une nouvelle approche pour prévenir la rechute*. De Boeck.
- Sezibera, V., & Philippot, P. (2009). *PTSD prevalence and prediction among Rwandan youth survivors of the 1994 genocide in Rwanda*. Manuscript in preparation.
- Thabet, A. A. M., Abed, Y., & Vostanis, P. (2004). Comorbidity of PTSD and depression among refugee children during war conflict. *Journal of Child Psychology and Psychiatry, 45*, 533–542.
- Watkins, E., & Baracaia, S. (2002). Rumination and social problem-solving in depression. *Behaviour Research and Therapy, 40*, 1179–1189.

Watkins, E., Scott, J., Wingrove, J., Rimes, K., Bathurst, N., Steiner, H., et al. (2007). Rumination-focused cognitive behaviour therapy for residual depression: A case series. *Behaviour Research and Therapy*, 45, 2144–2154.

Wells, A., & Sembi, S. (2004). Metacognitive therapy for PTSD: A preliminary investigation of a new brief treatment. *Journal of Behavior Therapy and Experimental Psychiatry*, 35, 307–318.

Correspondence regarding this article should be directed to Vincent Sezibera, PhD, Catholic University of Louvain, Place du Cardinal Mercier, 10, 1348 Louvain-la-Neuve, Belgium. E-mail: vincent.sezibera@student.uclouvain.be

Copyright of Journal of Cognitive Psychotherapy is the property of Springer Publishing Company, Inc. and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.