A Randomized Controlled Trial of Trauma-Focused Cognitive Behavioral Therapy for Sexually Exploited, War-Affected Congolese Girls

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Objective: To assess the efficacy of trauma-focused cognitive behavioral therapy (TF-CBT) delivered by nonclinical facilitators in reducing posttraumatic stress, depression, and anxiety and conduct problems and increasing prosocial behavior in a group of war-affected, sexually exploited girls in a single-blind, parallel-design, randomized,+ controlled trial. **Method:** Fifty-two 12- to 17-year-old, war-affected girls exposed to rape and inappropriate sexual touch in the Democratic Republic of Congo were screened for trauma, depression and anxiety, conduct problems, and prosocial behavior. They were then randomized to a 15 session, group-based, culturally modified TF-CBT (n = 24) group or a wait-list control group (n = 28). Primary analysis, by intention-to-treat, involving all randomly assigned participants occurred at pre- and postintervention and at 3-month follow-up (intervention group only). **Results:** Compared to the wait list control, the TF-CBT group experienced significantly greater reductions in trauma symptoms ($F_{1,49} = 52.708, p < 0 \cdot 001, \chi^2_p = 0.518$). In addition, the TF-CBT group showed a highly significant improvement in symptoms of depression and anxiety, conduct problems, and prosocial behavior. At 3-months follow-up the effect size (Cohen's d) for the TF-CBT group was 2.04 (trauma symptoms), 2.45 (depression and anxiety), 0.95 (conduct problems), and −1.57 (prosocial behavior). **Conclusions:** A group-based, culturally modified, TF-CBT intervention delivered by nonclinically trained Congolese facilitators resulted in a large, statistically significant reduction in posttraumatic stress symptoms and psychosocial difficulties among war-affected girls exposed to rape or sexual violence. Clinical trial registration information—An RCT of TF-CBT with sexually-exploited, war-affected girls in the DRC; http://clinicaltrials.gov/; NCT01483261. J. Am. Acad. Child Adolesc. Psychiatry; 2013;52(4):359-369. **Key Words:** randomized controlled trial, posttraumatic stress, depression and anxiety, sexual exploitation, war and conflict

Little research has been conducted on the nature and extent of gender-based violence and sexual exploitation in situations of war, conflict, or natural disasters,[1] and no systemic review has been published to date in this field. Although the issue of sexual violence during armed conflict has received more attention recently,[2] this focus is primarily on violence against women, leaving the issue of sexual violence and exploitation of young people at the margins of research, documentation, and intervention strategies.[3]

This article is discussed in an editorial by Dr. Judith A. Cohen on page 344.

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Worldwide, it is estimated that at least one in every three females is either physically or sexually abused at least once in her lifetime.[4] Large population-based surveys of sexual assault indicate a lifetime prevalence of 13% to 39% for women,[5] and the annual female rape rate in the US is estimated to be 0.5 per 1,000.[6]

The figure for the Democratic Republic of Congo (DR Congo), the scene of the world's deadliest conflict since World War II, is considerably higher. A study, which controversially used population estimates to extrapolate incidents of rape, claimed as many as 1.8 million Congolese women may have been raped with up

to 433,785 rapes in the 12-month period from 2006 to 2007.[7] In eastern DR Congo, the annual rape rate is estimated at 67 per 1,000.[7] This is the highest rate of gender-based violence in the world and means that, in certain parts of war-affected DR Congo, women and girls are 134 times more likely to be raped than their US counterparts.

The consequences of war and sexual violence for girls include physical injuries[8] (e.g., vaginal and rectal fistulas), sexually transmitted infections and pregnancy,[1,8] psychological distress[9] (e.g., posttraumatic stress, depression, anxiety, conduct problems), stigmatization or rejection by family,[1,10,11] disruption of education and/or vocational training,[8,12] and poverty.[8,12] Despite evidence that exposure to violence, particularly sexual violence, is a risk factor for adverse child development outcomes[13] and despite repeated calls for research into mental health interventions for war-affected young people,[1,3,9] the field is hampered by a lack of rigorously evaluated interventions for child victims of sexual violence and exploitation in war-affected countries.

Randomized controlled trials (RCTs) of trauma interventions have primarily focused on Western populations. These studies have found that trauma-focused cognitive behavior therapy (TF-CBT) was superior to child-centered therapy (CCT) in treating posttraumatic stress and emotional and behavioral problems in sexually abused 8- to 14-year-olds[14] and was superior to a waiting-list control group in reducing posttraumatic stress caused by multiple traumas in 3- to 6-year-olds.[15]

The few RCTs carried out with war-affected children and adolescents among non-Western populations have focused on child soldiers in Uganda,[11] genocide survivors in Rwanda,[16] and internally displaced adolescents in northern Uganda.[17] However, the authors are not aware of any intervention specifically designed for adolescent victims of sexual violence and exploitation and so this study is a timely and important intervention for a largely underrepresented and overlooked population.

The primary research question is whether a culturally modified TF-CBT intervention delivered by nonclinical facilitators would lead to a reduction in posttraumatic stress symptoms among war-affected survivors of sexual violence and exploitation in the Democratic Republic of Congo. A lack of qualified mental health workers in this resource-poor area meant that nonclinicians had to facilitate this intervention. The secondary research questions examined the effects of the intervention on symptoms of depression and anxiety, conduct problems, and prosocial behavior. The authors anticipated that the TF-CBT intervention group would be superior to the wait-list control group on all four outcomes.

METHOD

Trial Design

A single-center, equal-randomization, single-blind (outcome assessors), parallel-group (active and wait-list control) study was chosen to address this question.

An additional resilience questionnaire was piloted, translated, and back-translated for the study, but was eventually discarded after feedback from the interviewers/outcome assessors suggested that the clinical interview was long enough and that asking more questions could lead to fatigue and inaccurate responses.

Participants

Fifty-two war-affected girls aged 12 to 17 years who had either witnessed or had personal experience of rape or sexual abuse (described in the questionnaire as inappropriate sexual touch) took part in the study. This sample was drawn from a group of 60 girls comprising minors rescued from brothels by a local nongovernmental organization (NGO; Conférence Régionale de l'Afrique de l'Ouest Francophone [CERAO]), victims of military and militia sexual violence, and relatives of CERAO workers. At the time, all 60 girls attended vocational training classes in tailoring and mechanics sponsored by the NGO World Vision. To determine who had witnessed or experienced rape or sexual violence, these questions were added to the traumatic life events questionnaire that all 60 girls completed during the screening process.

Because of the stigma and embarrassment associated with having been raped or sexually abused, the researchers were advised to use the more general and less intrusive criteria of either having witnessed or having personally experienced rape or inappropriate sexual touch as the eligibility criteria. Intellectual disability, psychosis, or severe emotional and behavioral problems (e.g., physical violence towards staff) that prevented group participation were the exclusion criteria. At initial screening, no one met exclusion criterion. The intervention took place in Beni, a small town in North Kivu, with an estimated population of 100,000. An investigatory report on child protection risks carried out by World Vision before the intervention found that the problem of under-age prostitution was particularly acute in Beni, with World Vision estimating that approximately 200 brothels may have been in operation in the town at the start of the study. Rape and inappropriate sexual touch occurred in these bar-cum-brothels where children as young as 11 years

olds served alcohol during the day and provided sexual services to paying customers at night.

Consent Procedures

Ethical approval was granted by two separate university research ethics review boards in the school of psychology. The project was approved by World Vision's Regional Director in Goma in consultation with their child protection and social worker team. The Director and President of CERAO reviewed the project and sought clarifications on delivery and implementation of the study before granting approval. Before screening, the research project was explained to all participants and staff members of CERAO, and a 24-hour period of reflection was provided before individual oral informed consent was sought.

To ensure that consent to participate was based on an understanding of what the intervention entailed; written consent was sought from participants 1 week into the intervention. As participants had either been displaced or orphaned by the war or had been ostracized by their families for their involvement in prostitution, it was impossible to obtain parental consent for many of participants. Instead, in line with prior studies with war-affected and displaced youth,[9,17,18] consent was sought from next of kin and, where this was not possible, from the head of a local NGO providing humanitarian support to participants.

Evaluators

Three men and two women from CERAO interviewed each girl individually before and after the intervention and at 3 month follow-up. The five evaluators were selected by the Director of CERAO based on their counseling experience and their literacy levels. Although none of the evaluators had any counseling or social work qualifications, they all had at least 5 years experience working with both child soldiers and vulnerable girls in the projects run by CERAO and other local NGOs. All five evaluators were known to the girls, and this was thought to be important in ensuring accurate answers to the questions posed. All received training on basic interview techniques. The interviewers (outcome assessors) were blinded to the intervention allocation. This involved withholding the randomization sequence from the interviewers, having no overlap between interviewers and intervention facilitators, and ensuring that no interviewers attended or participated in any of the intervention sessions. At the postintervention interviews, the assessors were told not to ask which group the girl they were interviewing had been in, and each assessor was given a mix of girls from both groups, who were waiting together in the school hall for their individual interviews.

Intervention

The intervention group received a 15-session, manualized, culturally modified, trauma-focused cognitive behavioral therapy intervention.[19] TF-CBT was chosen because it is the only well-established treatment for children exposed to traumatic events.[20] The manual was based on "A Web-based learning course for Trauma-Focused Cognitive Behavioral Therapy"[21] and was approved by three experienced CBT practitioners before implementation. It included the following modules: introduction (ground rules, psychoeducation on rape and trauma, and a safe place); stress management (controlled breathing, progressive muscle relaxation, and thought stopping); feelings (affect expression and modulation); cognitive coping (the cognitive triangle, the relationship between thoughts, feelings, and behavior; trauma narratives; and identifying and changing inaccurate or unhelpful cognitions. All of the modules were delivered in a group, with the exception of module 5, for which three individual sessions were provided.

The intervention facilitators were social workers employed by World Vision to provide psychosocial support for girls enrolled in the vocational training classes. Facilitators received the manualized intervention in French to study before each session and raise any questions or suggest any cultural adaptations required before delivering the session. Daily pre- and postintervention meetings took place with the facilitators and lead authors (who had previous experience delivering CBT interventions with young people in Northern Ireland) to ensure that module content was understood, to discuss cultural adaptations, and to address logistical problems (e.g., time management). Cultural adaptations included having a female facilitator talk about ways to reduce the risk of sexual violence in the future (e.g., fetching firewood with a friend, not working in a brothel, etc.); the use of culturally familiar games, songs, and examples (e.g., belief that a neighbor is a witch); and social workers visiting the girl's guardians to try to re-establish contact, reduce stigmatization, and foster family acceptance. The lead researcher, who speaks Swahili, monitored each session to ensure treatment integrity and to check that examples, activities, and teaching points discussed at the preintervention meeting were addressed.

Three caregiver sessions took place for the parents/guardians of girls in the intervention group explaining the intervention, talking about the impact of trauma, sensitizing parents about children's rights, and discussing what caregivers can do to foster healthy relationships at home. Caregiver attendance over the three sessions ranged from 82% to 100%.

There was one intervention group with sessions that ran for 2 hours per day, 3 days per week for five weeks in a hall in the local secondary school. It finished with a graduation ceremony in which the girls, their parents/guardians, religious leaders, and representatives of civic

society and nongovernmental organizations attended. This ceremony involved sharing personal experiences of the intervention, receiving certificates for completing the intervention, and a celebration with snacks and sodas.

No financial incentives were offered for participation, however, to ensure the girls in the intervention group were not hungry during the sessions, a piece of bread and half an avocado were provided each day. At the end of the intervention, the 60 girls who participated in the preintervention interviews received a hygiene kit comprising a bucket, soap, shampoo, creams, nail polish, underwear, and feminine hygiene products.

Outcomes

Changes in reported symptom levels, as opposed to clinical diagnoses, were chosen to assess outcome variables. This decision was taken because of the absence of a ''gold standard'' in determining psychiatric caseness in the DR Congo,[18] and the authors' concern with the validity of specific diagnoses in non-Western populations where participants who failed to meet specific symptom cut-off points would be excluded, yet would still benefit from a psychological intervention. Thus, changes in total symptom scores were used to ascertain how effective the intervention was over time. (For reference, 60% of the sample had scores of 38 or higher on the University of California–Los Angeles Posttraumatic Stress Disorder Reaction Index [UCLA-PTSD RI], a cut-off point shown previously to have a sensitivity of 0.93 in detecting PTSD).[22]

Instruments

To assess the severity of posttraumatic stress symptoms the UCLA PTSD Reaction Index (Revised)[22] was used. This is a 22-item, self-report questionnaire used to assess PTSD and traumatic stress in children and adolescents. The questionnaire had previously been validated with war-affected Somali adolescents.[23] Respondents indicate how frequently they experience a symptom using a 5-point Likert scale ranging from 0 (none of the time) to 4 (most of the time). To simplify the questionnaire, symptom frequency was assessed over the last week instead of the last month, and interviews were used because of the literacy level of some of the girls. A previous study reports test–retest reliability on the UCLA-PTSD RI of 0.59 (hyper-arousal), 0.86 (intrusion), 0.92 (avoidance). One week test–retest reliability calculated on a sample of 46 junior high school students in Pasadena, California, by Rodriguez *et al.*, 2001 (personal correspondence). The current study found Cronbach's α to be (0.816) for the Congolese Swahili version of the PTSD-RI (Cronbach's α was calculated for a sample of 112 comprising the 60 girls in this study and 52 former street boys and male child soldiers who were also receiving humanitarian support from World Vision).

To assess psychosocial functioning, the African Youth Psychosocial Assessment Instrument (AYPA) (formerly known as the Acholi Psychosocial Assessment Instrument) was used.[17,24] This is a 40-item measure originally developed in northern Uganda after extensive qualitative consultation with youth, caregivers, and mental health workers. It is the only African-developed, validated[24] questionnaire available for internalizing and externalizing behavior, and contains symptoms of distress that do not appear in ''Western-developed'' measures (e.g., muttering to oneself, not following the rules of the community, sitting with your head in your hand, feeling pain in your heart, believing people are chasing you).

The AYPA assesses four locally defined domains of bio-psychosocial deficits: depression and anxiety-like symptoms, socially unacceptable behavior (conduct), somatic complaints without medical cause and prosocial behaviors. Test–retest reliability of 0.71 (depression and anxiety), 0.66 (conduct), 0.87 (prosocial) was found using a sample of 19 girls tested by the same interviewers 3 days later. Internal consistency of the three subscales used in the study ranged from 0.824 (conduct; Cronbach's α was calculated for a sample of 112 comprising the 60 girls in this study and 52 former street boys and male child soldiers who were also receiving humanitarian support from World Vision) to 0.774 (depression and anxiety; 1 week test–retest reliability calculated on a sample of 46 junior high school students in Pasadena, California by Rodriguez *et al.*, 2001, personal correspondence) to 0.76 (prosocial behavior; Cronbach's α was calculated for a sample of 112 comprising the 60 girls in this study and 52 former street boys and male child soldiers who were also receiving humanitarian support from World Vision). The correlation between the UCLA PTSD-RI Index and the AYPA was 0.63 (depression and anxiety subscale), 0.287 (conduct subscale), and 0.364 (prosocial scale).

To ensure that the UCLA PTSD RI and the AYPA were culturally appropriate; the English versions were translated by two Congolese English speakers from North Kivu. Their translation was reviewed by an expatriate Swahili speaker (P.O'C.) before administration of the two measures was explained, item by item, to the group of interviewers from CERAO who first piloted the intervention with a comparable (nonparticipant) sample before carrying out the interviews.

Members of CERAO also took part in a focus group to brainstorm different traumatic life events that the girls might have experienced. These events were compiled into a dichotomous questionnaire that was used during the preintervention assessment only.

Data were collected by the same outcome assessors at preintervention (May 2011), 7 weeks later at postintervention (July 2011), and at a 3-month follow-up (October 2011). The individual interviews were conducted in the spare rooms of a private house and classrooms of a local secondary school. The primary

outcome measure was change in posttraumatic stress symptoms, whereas secondary outcome measures were changes in depression and anxiety-like symptoms, conduct problems, and prosocial behavior.

Randomization

Participants were randomly assigned to either the intervention or control group using a computer-generated random sequence of numbers (www.random.org). Because of the sample size involved, it was decided not to use additional strata but to place participants in a list in order of their total score on the UCLA-PTSD-RI, and to allocate participants according to the random sequence starting at the top of the list. The random sequence was supplied by one of the authors off-site (C.S.). World Vision and CERAO were responsible for participant enrollment (via the vocational training program they were offering), and the first author (P.O'C.) allocated participants based on the randomized sequence supplied. Selection bias was reduced by ensuring that treatment allocation was concealed from those responsible for participant enrollment and by ensuring that the person responsible for assigned participants had met none of the participants before the group allocation.

Power Analysis

Based on an RCT of group-based, trauma-focused cognitive behavior therapy with a group of multiethnic school children exposed to community violence in Los Angeles,[25] we anticipated a between-treatment effect size (Cohen's d) of 1.08 for the primary outcome: posttraumatic stress symptoms. At a power level of 0.90 (1-β err probability), we calculated the sample size per group to be 20 per treatment group. Although the authors acknowledge that many differences exist between the LA study and the present one, a group-based CBT intervention with children exposed to community violence was the closest fit found. Although no interim analysis or stopping guidelines were used, the team monitored the mental health of participants during the study using a daily mental health check-in question before each new session. If any participant was absent for more than one session, follow-up enquiries were carried out to learn why the participant was absent. As all participants were currently enrolled in a 6-month vocational training course, we anticipated the study drop-out risk to be low.

Data Analysis

An analysis of covariance (ANCOVA) was used to analyze the primary and secondary outcome measures in the intention-to-treat population. The ANCOVA model included treatment as fixed effect and symptom score at randomization as covariate. For the follow-up analysis, effect sizes were calculated by subtracting the 3-month symptom means of the intervention group from their original preintervention means and dividing by the standard deviation of the mean differences. No effect size was calculated for the wait-list control group, as they had received their intervention before the 3-month follow-up study was completed.

Bonferroni adjustment of significance levels was applied for multiple comparisons (Bonferroni-corrected significance level: $0.05/4 = 0.0125$). Data analysis was carried out using SPSS for Windows, Release Version 18 (SPSS, Inc., Chicago, IL).

RESULTS

Baseline Characteristics

Randomized allocation placed 24 participants in the trauma-focused cognitive behavioral therapy group and 28 participants in the wait-list control group (Figure 1). Tables 1 and 2 summarizes ages, traumatic events exposure, and psychological and psychosocial symptoms at baseline. The mean age of the 52 participants at baseline was 16.02 years.

Inappropriate sexual touch was the most common traumatic event experienced (48 of 52), and lack of food or water, severe punishments, seeing blood or corpses, threats, and rape were witnessed or experienced by 37 or more of the 52 participants in the study. When asked to select their most traumatic life event, 34 of the 52 participants selected parental abandonment, sexual exploitation, or parental death (Table 3).

Attendance

Despite illnesses (malaria, worms), road accidents, bereavements, and water shortages requiring long trips to find functioning boreholes, the average attendance was 13.19 (attendance range, 9–15). Four girls who were originally assigned to the intervention group did not attend (because of illness, travel, or family bereavement) and were offered a place in the waitlist group's intervention at the end of the study.

Change in Symptom Severity (Preintervention to Postintervention)

Table 4 reports mean changes from baseline to postintervention for both the TF-CBT group and the wait-list control group on posttraumatic stress symptoms, depression and anxiety symptoms, conduct problems, and prosocial behavior. No statistically significant baseline differences were found between the intervention and control groups on any of the four variables measured at pretest (independent t tests) or on the 2 eligibility criteria (Mann–Whitney U test).

An ANCOVA revealed that, in comparison to the wait-list control group, the TF-CBT treatment group had a highly significant reduction in trauma symptoms with a very large effect size ($F_{1,49} = 52.708$, $p < .001$, $\chi_p^2 = 0.518$), a highly significant reduction in depression and anxiety with a very large effect size ($F_{1,49} = 52.371$, $p < .001$, $\chi_p^2 = 0.517$), a highly significant reduction in conduct problems with a large effect size ($F_{1,49} = 17.123$, $p < .001$, $\chi_p^2 = 0.259$) and a significant increase in prosocial behavior with a medium effect size ($F_{1,49} = 5.39$, $p < .05$, $\chi_p^2 = 0.099$). For partial eta squared, an effect size of 0.0099 constitutes a small effect, 0.0588 a medium effect, and 0.1379 a large effect (Cohen, 1988, p. 283).[26]

Change in Symptom Severity for the Intervention Group (Pre- and Postintervention to Follow-Up)

Table 5 shows the results of a 3-month follow-up of the intervention group. Mean change difference at follow up was 25.79 points (95% CI = 20.440–31.143, $p < .001$), for posttraumatic stress symptoms 28.79 points (95% CI = 23.833–33.751, $p < .001$), for depression and anxiety 6.042 points (95% CI = 3.367–8.717, $p < .001$), for conduct problems −8.458 (95% CI, −10.727 to −6.190, $p < 0.001$) for prosocial behavior. This equates to a very large within-treatment effect size (Cohen's d) for posttraumatic stress symptoms (d = 2.04), depression and anxiety (d = 2.45), conduct problems (d = 0.95), and prosocial behavior (d = −1.57).

Table 6 shows the changes in symptoms from posttest to 3-month follow-up for the intervention group. Both depression and anxiety symptoms (4.79 points, 95% CI = 0.617–8.966, $p < .05$) and prosocial behavior (−3.29 points, 95% CI = −5.046 to −1.537, $p < 0.05$) showed continued improvements 3 months after the intervention had ended. This equates to a medium within-treatment effect size.

FIGURE 1 Flow chart of study participants. Note: TF-CBT = trauma-focused cognitive behavioral therapy.

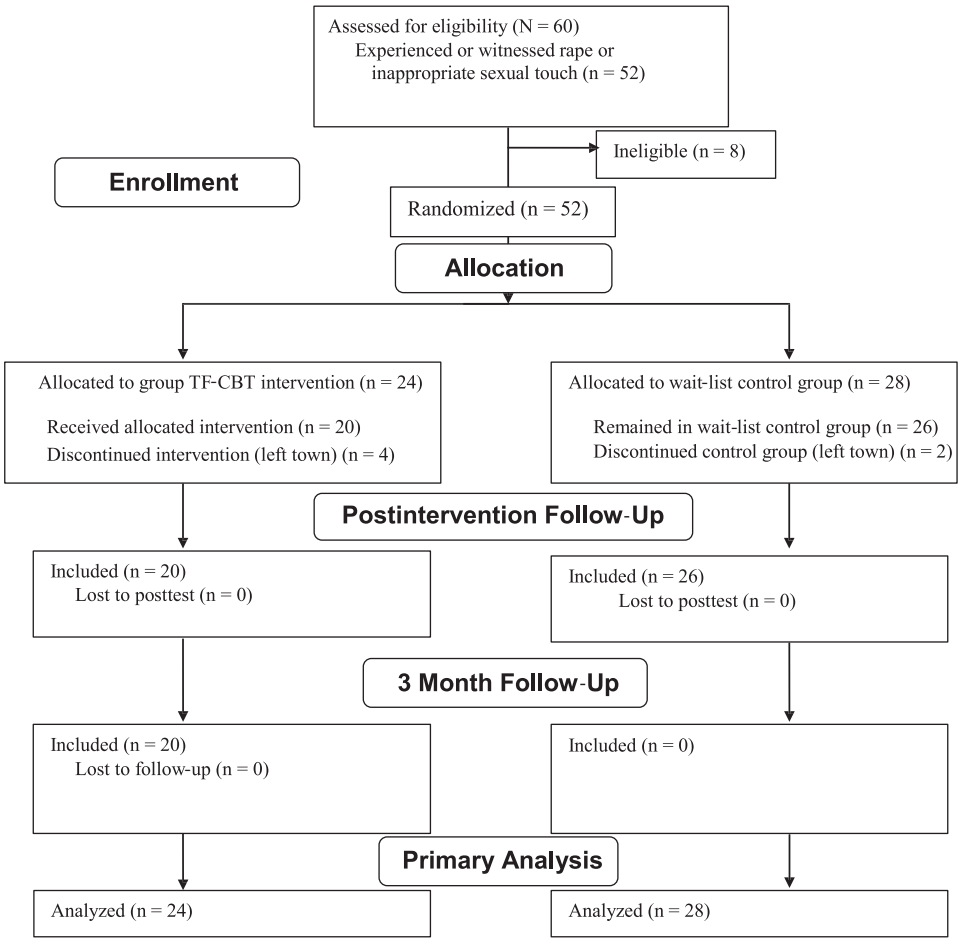

TABLE 1 Study Sample Characteristics at Trial Baseline (n = 52) for Traumatic Life Events

Traumatic Life Event Items[a]	TF-CBT (n = 24), n (%)	Control (n = 28), n (%)	Total (n = 52), n (%)
Inappropriate sexual touch	24 (100)	24 (86)	48 (92)
Lack of food or water	21 (88)	22 (79)	43 (83)
Severe punishment or revenge	20 (83)	20 (71)	40 (77)
Threats	14 (58)	25 (89)	39 (75)
See a lot of blood or corpses of people	16 (67)	22 (79)	38 (73)
Rape	16 (67)	21 (75)	37 (71)
Carrying heavy loads	14 (58)	20 (71)	34 (65)
Looting	13 (54)	20 (71)	33 (63)
Serious illness	17 (71)	15 (54)	32 (62)
Being badly beaten	15 (63)	16 (57)	31 (60)
Fighting or attacks	15 (63)	14 (50)	29 (56)
Road accident	14 (58)	14 (50)	28 (54)
Explosions or fire	11 (46)	13 (46)	24 (46)
Unplanned pregnancy	10 (42)	14 (50)	24 (46)
Parental separation or divorce	12 (50)	9 (32)	21 (40)
Murder	9 (38)	12 (43)	21 (40)
Forced to lie on a cement floor and soaked with water	8 (33)	13 (46)	21 (40)
Parent's death	6 (25)	14 (50)	20 (38)
Mutilation	9 (38)	10 (36)	19 (37)
Burned with a hot knife	5 (21)	9 (32)	14 (27)
Ambush	5 (21)	7 (25)	12 (23)
Shot with a bullet	4 (17)	7 (25)	11 (21)
Abduction	5 (21)	5 (18)	10 (19)
Number of traumatic life events, mean (SD)	11.79 (4.92)	12.36 (3.59)	

Note: The first column, "Inappropriate Sexual Touch," does not register 100% of participants because some participants had witnessed or experienced rape without witnessing or experiencing inappropriate sexual touch and thus met inclusion criteria for the study on this count instead.

[a]*The girls were asked if they had witnessed or experienced each of the 23 traumatic life events.*

DISCUSSION

To our knowledge, this is the first randomized controlled trial of a trauma intervention for war-affected girls in low- and middle-income countries (LAMIC) who have been exposed to rape and sexual abuse. Findings show that group-based, culturally modified, TF-CBT significantly reduced psychological distress and psychosocial difficulties among this population. These gains were either maintained or improved (in the case of depression and anxiety symptoms and prosocial behavior) 3 months postintervention. Similar to previous randomized controlled trial interventions in areas with a lack of mental health professionals[11,16,17] this study shows that TF-CBT can be applied successfully by trained local facilitators without a mental health or medical background.

The effect of TF-CBT cannot be attributed to spontaneous recovery or vocational training, as the control group also received vocational training but showed no such symptom reduction. The within-treatment effect size for posttraumatic stress symptoms (d = 2.04) and depression and anxiety (d = 2.45) were similar or slighter higher than effect sizes in similar trials with war-affected children and adolescents.[11,16,17]

The authors believe that this strongly positive and sustainable finding can be explained by some of the following factors. First, the girls genuinely believed that this treatment would help them. They trusted the team and had a positive expectation that they would be helped. Second, many had never spoken about their traumatic experiences to anyone. The opportunity to do this in a supportive and empathetic environment was described by many participants as a benefit. Third, the shared experience of group work provided peer support from those with similar experiences. Some of the intervention group had even spontaneously formed small support groups

TABLE 2 Study Sample Characteristics and Symptoms at Trial Baseline (n = 52)

Characteristic	TF-CBT (n = 24), mean (SD)	Control Group (n = 28), mean (SD)	t	p[a]
Age (y)	15.83 (1.27)	16.18 (1.34)	−0.949	0.347
Number of traumatic events	11.79 (4.92)	12.36 (3.59)	−0.478	0.635
Trauma symptoms (UCLA-PTSD RI)	40.88 (10.03)	40.29 (10.91)	0.202	0.841
Depression and anxiety-like symptoms	37.96 (10.16)	39.18 (10.57)	−0.422	0.675
Conduct symptoms	8.58 (6.33)	8.07 (6.67)	0.282	0.779
Prosocial behavior	16.50 (4.95)	16.43 (5.28)	0.050	0.960

Note: UCLA –PTSD RI = University of California–Los Angeles Posttraumatic Stress Disorder Reaction Index.
[a]*Independent t-tests (confidence interval: 95%) measured baseline significance for continuous variables.*

to practice their relaxation and mental imagery techniques together during the intervention. This accelerated their recovery as they both supported each other and improved their relaxation skills at the same time.

However, in carrying out this research, certain limitations were present. First, only self-report measures of psychological distress and psychosocial difficulties were used in the study. Triangulation involving reports from parents, peers, or teachers could be included in future studies. Second, the sample size was small; it was a convenience sample, and the intervention was delivered in an urban setting where existing vocational support was being provided. These factors reduce the external validity of the findings. Third, the use of exposure to a traumatic event (e.g., rape or sexual abuse) rather than the existence of disabling levels of distress may be viewed by some as a study limitation. However, it must be stated that the sample had significant levels of psychological distress (60% scoring 38 or more on the UCLA-PTSD measure) before the intervention. The decision to use event exposure rather than symptomatology as eligibility criteria was made because of a fear that if the study demanded disabling levels of distress as a prerequisite for participation, some girls who needed psychological help would have been excluded. Given the risk of missing cross-cultural expressions of distress, it was decided to make the eligibility criteria as broad as possible. It was also believed that the skills-based, educational aspect of the intervention would benefit girls who may not currently have been experiencing high levels of psychological distress but may very well do so in the future, because of the risk of war-affected populations being exposed to similar traumatic events in the future as well.

TABLE 3 Single Event Selected as Worst Traumatic Life Event for the Girls in the Study

Worst Single Event (n = 52)	n (%)
Parental separation, divorce, or abandonment	12 (23)
Rape, sexual exploitation, working in a brothel, underage pregnancy	12 (23)
Death of a parent/parents	10 (19)
Family abuse, neglect, threats, or taunts	6 (12)

Note: Some of these events may be causal (i.e., the death of a parent may have led to a girl working in a brothel).

Despite these limitations, the project offers a potential blueprint for incorporating a psychological intervention within an existing psychosocial program (vocational training). As Table 1 shows, there is a strong overlap between poverty, parental death, family break-up, and sexual exploitation. By dealing with psychological distress and providing a viable alternative means of earning a living, recovery is supported and the risk of exposure to future traumatizing experiences in brothels can be reduced.

The main clinical implications of this study are that TF-CBT can be adapted to work effectively in a population that is culturally very different from its original target population. Second, TF-CBT can be used to reduce psychological distress caused by a wide range of traumatic events. Third, a group-based format of delivery is a viable alternative to individual therapy in situations in which a large number of sexually abused or war-affected young persons need psychological support. Finally, nonclinical facilitators can, with training, deliver effective therapeutic interventions that are culturally appropriate and replicable.

TABLE 4 Effectiveness of the Intervention for Intention-to-Treat Group in Improving Posttraumatic Stress Symptoms, Depression and Anxiety-like Symptoms, Conduct Problems, and Prosocial Behavior

Variable	TF-CBT Intervention Group (n = 24), Mean (SD)			Waitlist Control Group (n = 28), Mean (SD)			Value F[a] (1,45)	p[b]	Effect Size (χ_p^2)
	Pre	Post	Diff	Pre	Post	Diff			
posttraumatic stress (UCLA-PTSD RI)	40.88 (10.03)	18.38 (10.53)	22.50 (16.39)	40.29 (10.91)	42.93 (13.67)	−2.64 (12.84)	52.708	<.001	0.518
Depression/anxiety (AYPA subscale)	37.96 (10.16)	13.96 (10.30)	24.00 (13.36)	39.18 (10.57)	40.04 (15.18)	−0.86 (14.80)	52.371	<.001	0.517
Conduct problem (AYPA subscale)	8.58 (6.33)	1.96 (3.17)	6.63 (6.45)	8.07 (6.67)	9.36 (8.93)	−1.29 (8.73)	17.123	<.001	0.259
Prosocial behavior (AYPA subscale)	16.50 (4.95)	21.67 (4.70)	−5.17 (6.45)	16.43 (5.28)	18.46 (5.35)	−2.04 (5.94)	5.390	.024	0.099

Note: AYPA = African Youth Psychosocial Assessment Instrument; TF-CBT = trauma-focused cognitive behavioral therapy; UCLA-PTSD RI = University of California–Los Angeles Posttraumatic Stress Disorder Reaction Index.

[a] *F value refers to between-subject symptom change score using analysis of covariance (95% confidence interval).*

[b] *p Value refers to significance of the difference in postintervention scores between the intervention and control group after the intervention.*

TABLE 5 Mean Intention-to-Treat Group Differences and Effect Size Between Baseline and 3-Month Follow-Up

Outcome[a]	Mean (SD) at Baseline (n = 24)	Mean (SD) At Follow-Up	Mean Change (%)	Change Difference, Mean (SD)	Mean Change Difference (95% CI)	p	Effect Size (Cohen's d)
PTS symptoms	40.88 (10.03)	15.08 (8.79)	63	25.79 (12.67)	20.440 to 31.143	<.001	2.04
Depression and anxiety	37.96 (10.16)	9.17 (7.26)	76	28.79 (11.74)	23.833 to 33.751	<.001	2.45
Conduct	8.58 (6.33)	2.54 (3.04)	70	6.04 (6.34)	3.367 to 8.717	<.001	0.95
Prosocial[b]	16.50 (495)	24.96 (5.06)	−51	−8.46 (5.37)	−10.727 to −6.19	<.001	−1.57

Note: PTS = posttraumatic stress.

[a] *Paired-samples t tests (95% confidence interval) were used to test for significance.*

[b] *For pro-social behavior, a negative mean change difference signifies an increase in prosocial behavior.*

TABLE 6 Mean Intention-to-Treat Group Differences Between Postintervention and 3-Month Follow-Up

Outcome[a]	Mean (SD) at Posttest (n = 24)	Mean (SD) at Follow-up	Mean Change (%)	Mean (SD) Change Difference	Mean Change Difference (95% CI)	*p*	Effect Size (Cohen's d)
PTS symptoms	18.38 (10.53)	15.08 (8.79)	18	3.29 (10.78)	−1.260 to 7.844	.148	0.31
Depression and anxiety	13.96 (10.30)	9.17 (7.26)	34	4.79 (9.88)	0.617 to 8.966	<.05	0.48
Conduct	1.96 (3.17)	2.54 (3.04)	30	−0.58 (1.98)	−1.418 to 0.251	.162	−0.29
Presocial[b]	21.67 (4.70)	24.96 (5.06)	−15	−3.29 (4.15)	−5.046 to −1.537	<.05	−0.79

Note: PTS = posttraumatic stress.
[a]*Paired-samples t tests (95% confidence interval) were used to test for significance.*
[b]*For pro-social behavior, a negative mean change difference signifies an increase in prosocial behavior.*

Future Research

More studies are needed to compare different group-based interventions, to test the effectiveness of various TF-CBT components, and to examine how psychological interventions can support existing psychosocial programs to offer a more holistic and effective intervention. Although recent consensus has emerged on the complementarity of psychological and psychosocial interventions,[27,28] this is frequently understood as a multi-layered intervention in which the most severely affected persons are referred to individual specialized mental health support.[29] This study suggests that adolescents presenting with psychological distress and psychosocial difficulties can benefit from a group-based psychological intervention run in conjunction with, and not instead of, psychosocial support.

Finally, this study has shown that, for many war-affected girls, parental loss can be just as devastating as experiencing or witnessing rape and sexual abuse. Future humanitarian assessments and interventions need to take cognizance of the broader causes of psychological distress among war-affected girls in low- and middle-income countries, and provide assistance to all children in need of help rather than just those who meet narrowly defined beneficiary criteria (e.g., victims of gender-based violence or former child soldiers). &

CG Clinical Guidance

- Trauma-focused cognitive behavioral therapy (TF-CBT) can be adapted as a therapeutic intervention for war-affected, sexually exploited girls experiencing psychological distress in postconflict contexts.
- A culturally modified, manualized version of trauma-focused CBT has been shown to be highly effective in reducing symptoms of posttraumatic stress, depression and anxiety, and conduct problems in participants exposed to a wide variety of traumatic events.
- A group-based format of delivery is a viable alternative to individual therapy in situations in which a large number of sexually abused or war-affected young persons need psychological support.
- Nonclinical facilitators can, with training, deliver effective therapeutic interventions that are both culturally appropriate and replicable.

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Dr. O'Callaghan had full access to all of the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis.

The trial protocol is available on request from the lead author at: pocallaghan02@qub.ac.uk

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