



RESEARCH BRIEF

Randomized Controlled Trial of Trauma-Focused Cognitive Behavioral Therapy (TF-CBT) in Zambia



Overview

The **Applied Mental Health Research group (AMHR)** at **Johns Hopkins University** began investigating mental health issues in Zambia in 2004. In accordance with the Design, Implementation, Monitoring, and Evaluation (DIME) methodology (Bolton et al., DIME manual module 1; website below), AMHR began with a community based qualitative needs assessment to understand the mental health problems and priorities of the local population. Trauma and grief were identified as major problems in the community, and problems for which few (if any) services were available (Murray, et al., 2006). Following the qualitative study, the AMHR group reviewed the treatment literature to identify intervention options that could be adapted to the Zambian context to treat these problems. Based on this review and consultation with local health professionals and mental health experts, an evidence-based therapy called Trauma-Focused Cognitive Behavioral Therapy (TF-CBT) was selected (Murray et al., 2013; Bolton et al., DIME manual, module 6). AMHR also used the results of the qualitative study to adapt, test and validate an assessment tool to identify youth with trauma histories and significant (i.e. severe) mental health symptoms (Murray et al, 2011; Bolton et al, DIME manual module 2). Through a number of studies, AMHR learned that TF-CBT was feasible, acceptable and potentially efficacious (Murray et al., 2013a, b).

Project Overview

Country	Zambia
Research Partners	JHSPH, SHARPZ, Ministry of Health, University Teaching Hospital, University of Zambia
Funding	USAID DCOF
Sample	257 children, ages 5-18

AMHR has now, with the **support of USAID Displaced Children's and Orphans Fund (DCOF)**, **completed a randomized controlled trial of TF-CBT in Zambia to investigate its effectiveness in reducing trauma-related symptoms and impairments in critical functioning ability. Results showed that TF-CBT was highly effective at reducing trauma-related symptoms by a reduction of 82.4% compared to the average decrease of 21.7% for the wait-list control group. The effect size was 2.39.**

Method

In collaboration with Serenity Harm Reduction Programme Zambia (SHARPZ), JHU implemented the TF-CBT trial across five different partner sites with Orphans and Vulnerable Children (OVC), including: Barefeet, Ngombe Home Based Care, Kanuda Square Ministry of Health Clinic, City of Hope, and St. Paul's School. Children and their caregivers were recruited to participate in the study through the regular intake process at these five partner sites. Children were included in the study if they consented to participate and if they met eligibility criteria: 5-18 years old, reported at least one traumatic event, and indicated trauma-related symptoms by scoring a 38 or higher on the PTSD-RI. Participants (children and one of their caregivers) completed the full baseline assessment interview. This assessment included measures of demographics, trauma experiences and symptoms, critical functioning ability, HIV risk behaviors and attitudes, and substance and alcohol use. Following the assessment, children were randomly assigned to either begin immediate treatment with TF-CBT or to a wait-list. Those on the wait-list were asked to wait approximately 4 ½ months before beginning treatment during which they were called once a month to check on safety-related issues (e.g., suicide). Following the end of treatment, those participants who received TF-CBT were reassessed with the same instrument used at baseline. The participants on the wait-list also completed the full assessment a second time, approximately 4 ½ months after the initial assessment and before beginning their own treatment.

Intervention

The mental health intervention, known as **Trauma Focused Cognitive Behavioral Therapy (TF-CBT)**; www.musc.edu/tfcbt; Cohen et al., 2006), consists of psychoeducation, emotional regulation, correcting unhelpful thoughts, trauma narratives through gradual, safe exposure, and positive parenting. TF-CBT was chosen for this trial given its extensive evidence-base, and because the previous feasibility study conducted in Zambia found it to be effective, feasible, and acceptable. The overall reception to TF-CBT from both local counselors delivering the intervention and families receiving the intervention was quite positive. Previous research has also indicated that TF-CBT is effective for multiple types of trauma histories, including sexual and physical abuse, community violence, domestic violence, and traumatic grief - all traumas that are prevalent among OVC populations in Zambia.

Components of TF-CBT

- Engagement
- Psycho-education
- Relaxation
- Cognitive coping
- Cognitive restructuring
- Gradual exposure to trauma memories
- Conjoint parent/child
- Parenting
- Enhancing Safety

Twenty lay counselors, including eight from the five study sites as well as twelve external counselors were trained to deliver TF-CBT using the apprenticeship model developed for those with limited mental health education and/or background (Murray et al., 2011). The apprenticeship model consisted of a live two-week training conducted by expatriate TF-CBT experts, followed by several months of group practice sessions overseen by a local supervisor. TF-CBT experts provided remote clinical supervision throughout implementation. The study was therefore an “effectiveness” trial, as **the counselors conducting the intervention in the study are the same as those who would be conducting interventions in a “real-world” program.** Counselors were chosen from within study sites and outside if they expressed an interest in providing mental health services, and had at least a high school education (no mental health background or previous training was required).

Results

1) High uptake and completion of the intervention suggest that it was acceptable to children. Out of 131 children who were randomly assigned to TF-CBT, 106 successfully completed treatment and a post-assessment. Out of 126 children who were randomly assigned to the wait-list group, 104 successfully completed a post-assessment. The overall retention rate was 81.7% indicating that the intervention was acceptable to children and that a controlled trial can be successfully completed in this context with high follow-up rates.

2) Rates of experienced trauma types among children in the study were very high at baseline. The average number of trauma types experienced was 5.1 with the average number for males (5.5) significantly higher than females (4.6). Those children who reported not currently being in school also reported significantly more trauma types on average as compared to children who were currently in school (5.9 and 5.0, respectively).

3) Children reported high levels of trauma-related symptoms at baseline. Using a trauma symptom scale with 38 items that ranged from 0 (no trauma symptoms) to 4 (severe trauma symptoms) (total possible = 154), the average score at baseline among those in the TF-CBT group was 71.31 and among those in the wait-list control was 66.34, both much higher than the cut-off of 38.

Baseline child characteristics

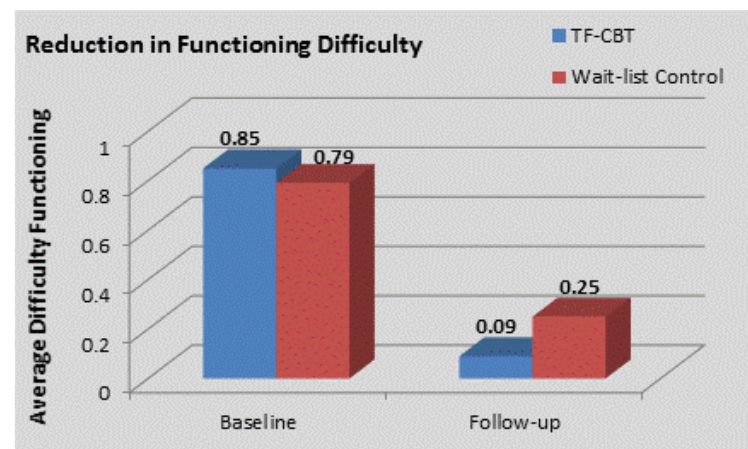
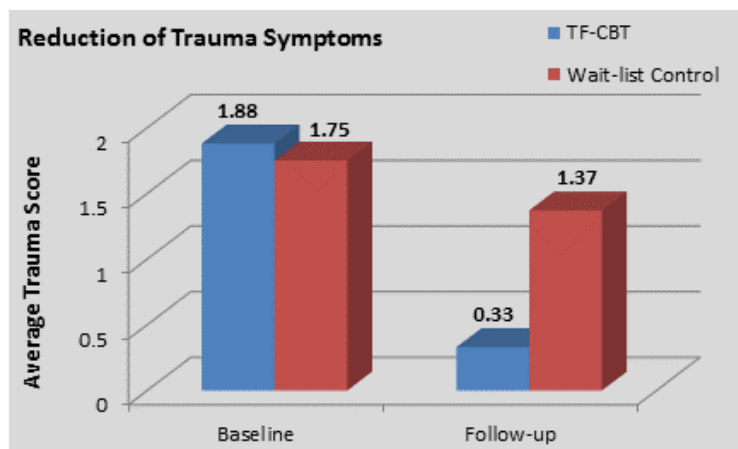
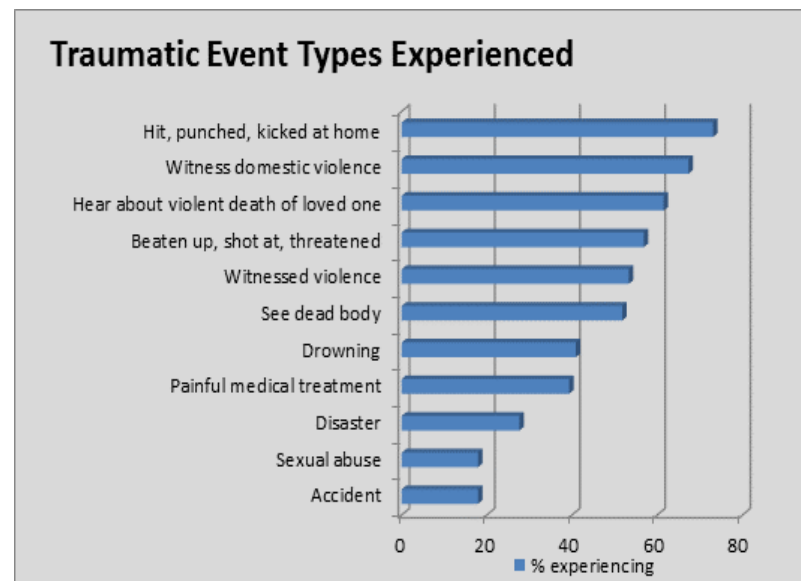
Gender	50% female
Average age	13.7 years
Education	13% out of school
Orphan status	36% single orphan 26% double orphan
Ethnicity	32% Bemba 21% Ngoni 47% Other

4) **Physical abuse or domestic violence at home was the most common traumatic experience reported.** Other traumatic experiences that over 50% of children endorsed included hearing about the violent death of a loved one, community violence and witnessing violence.

5) **Children in the TF-CBT group reported a statistically significantly larger reduction in trauma symptoms at the post-assessment interview compared to the children in the wait-list control group.** Average trauma score decreased from 1.88 to 0.33 among those who received TF-CBT, a reduction of 82.4%. Comparatively, the wait-list control group had an average decrease of 21.7%, from 1.75 to 1.37. Cohen's d calculated for the effect size was 2.39.

6) **Children in the TF-CBT group reported a statistically significantly larger reduction in critical function impairment at the post-assessment interview compared to the children in the wait-list control group.** Average functioning impairment score decreased from 0.85 to 0.09 among those who received TF-CBT, a reduction of 89.4%. Comparatively, the wait-list control group had an average decrease of 68.4%, from 0.79 to 0.25. Cohen's d for the effect size was 0.31.

7) **The effectiveness of TF-CBT on HIV risk behaviors and drug/alcohol use is undeterminable from this study due to a small sample size of adolescents.**



Lessons

- 1) **There is substantial need for mental health interventions for OVC in Zambia.**
- 2) **TF-CBT has potential for effectively treating trauma-related and functioning problems among vulnerable children and adolescents in Zambia.** Results from the pre/post assessment of children's mental health symptoms found large reductions in traumatic stress and smaller, yet still significant reductions in critical function impairment.
- 3) **Given sufficient resources, it is feasible to train lay counselors to deliver a mental health intervention in Zambia.** The project successfully trained 20 lay counselors to deliver a mental health intervention within six months, suggesting that the apprenticeship model is feasible in this context given sufficient investment in training and supervision.

4) It is possible to integrate evidence-based treatment, such as TF-CBT, into on-going programming in Zambia.

Next Steps

Scale up and Sustainability:

How and where can we provide these services for the families within Zambia?

How do we successfully integrate TF-CBT into current programs and throughout Zambia?

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References:

- Bolton, et al. DIME Manual, Modules 1-8. http://www.jhsph.edu/research/centers-and-institutes/center-for-refugee-and-disaster-response/response_service/AMHR/dime/index.html.
- Cohen JA, Mannarino A, Deblinger E. Treating Trauma and Traumatic Grief in Children and Adolescents. 2006. Guilford Press. (www.musc.edu/tfcbt).
- Murray LK, Bass J, Chomba E, Haworth A, Imasiku M, Thea D, Semrau K, Cohen J, Lam C, Bolton P. Validation of the Child Post Traumatic Stress Disorder-Reaction Index in Zambia, *International Journal of Mental Health Systems*. 2011; 5(1); 24.
- Murray, LK, Haworth A, Semrau K, Aldrovandi GM, Singh M, Sinkala M, Thea DM, & Bolton P. Violence and abuse among HIV-Infected Women and their children in Zambia: A Qualitative Study. *Journal of Nervous and Mental Disease*, August, 2006, 194 (8).
- Murray LK, Dorsey S, Bolton P, Jordans MJ, Rahman A, Bass J, Verdeli H. Building Capacity in Mental Health Interventions in Low-resource countries: An Apprenticeship Model for Training Local Providers. *International Journal of Mental Health Systems*. 2011; Nov 18;5(1):30. doi: 10.1186/1752-4458-5-30.
- Murray LK, Dorsey S, Skavenski S, Jere J, Kasoma M, Imasiku M, Bolton P, Bass J, Cohen J. Identification, modification and implementation of an evidence-based psychotherapy for children in a low-income country: the use of Trauma-Focused Cognitive Behavioral Therapy in Zambia. *International Journal of Mental Health Systems*. 2013 7:24. doi:10.1186/1752-4458.
- Murray LK, Familiar I, Skavenski S, Jere E, Mayeya J, Cohen JA, Bass J, Bolton PA. An evaluation of Trauma-Focused Cognitive Behavioral Therapy for Children in Zambia. *International Journal of Child Abuse and Neglect*. 2013; Jun 12. doi:pii: S0145-2134(13)00125-7. 10.1016/j.chiabu.2013.04.017.
- Murray LK, Skavenski S., Michalopoulos L, Bolton P, Bass J, Cohen J. Youth, Family and Counselor perspectives on the Implementation of TF-CBT in Zambia. *Journal of Clinical Child and Adolescent Psychology – Qualitative Issue*. 2014; 0 (0) 1-13. DOI: 10.1080/15374416.2013.859079.