A Chance to Thrive, Not Just Survive Ebola:
A Model for International Psychosocial Support Programming in Emergency and Disaster Settings

Playing to Live! & East Tennessee State University
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ABSTRACT

This poster reviews the efficacy of a community-based expressive arts program focused on building mental health capacity in Liberia post-Ebola. Exposure to community-wide trauma, such as the Ebola epidemic, during childhood is linked to long-term physical and mental health consequences. Psychosocial and mental health services are known to reduce the impact of trauma, yet access is inadequate in resource-limited communities.

Playing to Live! (PTL) is an American 501 c (3) organization with a mission to build effective and sustainable community-based expressive art programs which target the psychosocial needs of children and communities facing trauma. PTL has built a clinical team consisting of an art therapist, child life specialist, play therapist, and yoga therapist who collaboratively build and support program goals.

In 2015, PTL launched an innovative psychosocial support program, which utilized expressive art techniques to bridge the gap for mental health services in Liberia. This program targeted 40 former hot-zone communities, providing programming to over 850 children and 140 adults affected by Ebola.

Analysis of the program utilized paired t-tests to evaluate 514 pre- and post-psychological stress symptoms tests for child participants for both the 5-month (TG1) and 3-month (TG2) PTL program implementation. A mixed-methods analysis of variance (ANOVA) was conducted to test the significance of the two treatment groups when comparing the length of treatment periods. Analysis demonstrated a statistically significant impact in reducing symptoms of psychosocial stress (PSS) experienced over time.

METHODS

Selection of Participants

A total of 870 beneficiaries (ages 3-18 years old) participated in the collaborative PTL and Renewed Energy Serving Humanity (RESH) psychosocial support program; a total of 40 female Ebola survivors were trained as program facilitators and implemented services. Facilitators conducted program activities with groups of 15-25 children and youth within their own community at a minimum of two times per Week during the 5-month (TG1) or 3-month (TG2) implementation period.

Table 1: Program Monthly Implementation (X), Monitoring (M), Pre-Test (O1), Post Test (O2)

	Months				
Treatment Groups	**1**	**2**	**3**	**4**	**5**
Treatment Group 1	O_1, X	X, M	X, M	X, M	X, O_2
Treatment Group 2			O_1, X	X, M	X, O_2

Data Collection

Data were collected by PTL's site partner, RESH, who worked alongside the PTL facilitators. The data collection included child interviews on seven psychological stress symptoms (PSS), using a Liberian Ministry of Health authorized PSS scorecard. This tool tracked seven PSS, which have been found to follow traumatic events. These symptoms included: withdrawal, extreme anger, worry/anxiety, bedwetting, continuous sadness, violence, and poor eating habits.

Communities were randomly selected for posttest data. A total of 233 data entries were collected for TG1 posttests from the original 533 entries. A total of 123 data entries were collected for TG2 posttests from the original 337 entries. The 514 data entries across both treatment groups without posttests were excluded from the analysis.

Descriptive Statistics

All communities that received programming were in close proximity to Monrovia and reflected similarities in geography and descriptive statistics in both treatment groups. TG1 (n=233) had a mean age of 9.9 years old (SD=3.57), 63% female and 37% male participants.TG2 (n=133) had a mean age of 10.2 years old (SD= 3.87), 73% female and 27% male participants.

Statistical Analysis

This report evaluated the outcome effects of the PTL program on the PSS of 356 children beneficiaries with posttest data. The individual treatment group's (TG1 and TG2) pre- and post-test mean total PSS were compared using a paired t-test to analyze the effects of the program individually for the 5-month program (TG1) and 3-month program (TG2). A mixed-methods ANOVA between the pre- and post-symptom results for TG1 and TG2 was utilized to analyze if there was statistical significance between the effects of the programming for the two treatment groups.

RESULTS

Separately, TG1 and TG2's paired t-test yielded significant results ($p<.001$) for the decrease of PSS. For TG1, PTL found the following: pretest mean 1.32, (SD=0.92), posttest mean 0.77, SD=.72, $t(232)=8.738$, $p<.001$. For TG2, PTL found the following: pretest mean 2.22, (SD=1.45), posttest mean 1.79, SD=1.39, $t(122)=3.92$, $p<.001$.

A mixed-methods ANOVA was then conducted to compare the two treatment groups' pre- and post-test total symptom means. The ANOVA showed significance in the difference on the means of the pre-and post-symptoms ($F(1,354)=69.46$, $p<0.001$). Additionally, the ANOVA showed there was significance in mean symptoms for the two programs ($F(1,354)=84.32$, $p<.001$). This indicates that the longer treatment yielded more significance in the decrease of PSS symptoms.

Table 2: Treatment Group 1: Pre- to Post- Intervention PSS[a] Mean Scores (n=233)

	Mean (SD)	SE Mean
TG 1 Baseline PSS	1.32(0.93)	0.06
TG 1 Post-Intervention PSS	0.77(0.73)	0.05
TG 2 Baseline PSS	2.22(1.45)	0.13
TG 2 Post-Intervention PSS	1.79(1.39)	0.13

[a] PSS- Psychological Stress Symptoms. The mean score ranged from 0-7 symptoms

Table 3: Paired Sample Test for TG1 and TG2

	Paired Differences						
			95% Confidence Interval of the Difference				
	Mean (SD)	SE Mean	Lower	Upper	t	df	Sig. (2-tailed)
TG1 total_baseline and total_post_intervention	0.55 (0.96)	0.06	0.43	0.67	8.738	232	p<0.001
TG2 total_baseline and total_post_intervention	0.43 (1.19)	0.11	0.20959	0.63594	3.926	122	p<0.001

Note: Significant at the p<0.001 level

Table 4: Tests of Within-Subjects Contrasts

Measure:	Time					
Source		Type III Sum of Squares	df	Mean Square	F	Sig.
Time	Linear	38.038	1	38.038	69.464	p>0.000
Time * Treatment Groups	Linear	0.645	1	0.645	1.178	0.279
Error (factor 1)	Linear	193.849	354	0.548		

Note: Significant at the p<0.001 level

Table 5: Tests of Between-Subjects Effects

Measure:	Time				
Transformed Variable:	Average				
Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Treatment Groups	147.482	1	147.482	84.324	P>0.001
Error	619.142	354	1.749		

Note: Significant at the p<0.001 level

CONCLUSION

Discussion of Analysis

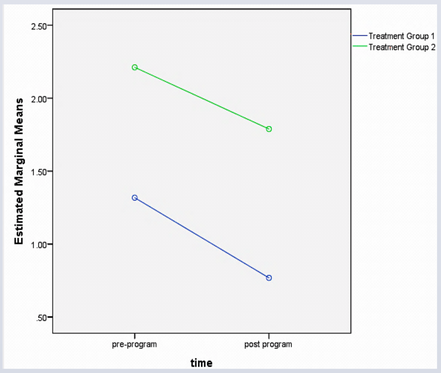
A significant decrease in reported symptoms was found in both treatment groups pre- to post-intervention. A mixed-methods ANOVA showed significance between the two groups, where 5-months of implementation (TG1) had a significant outcome decrease of symptoms compared to 3-months of implementation (TG2). This finding indicates that the longer the program intervention was received by participants, the more impact it had on the reduction of PSS.

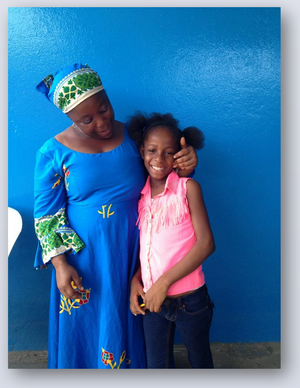
It is important to note that TG2 had a higher mean of total symptoms than TG1. Figure 1 shows the estimated marginal mean for both treatment groups.TG2's pre-data were collected two months after TG1's pre-data. These results indicate that stress symptoms increased over two months after the Ebola epidemic. It is known that children's reactions to trauma are not always immediate, at times they can appear weeks or months after the trauma event. Therefore these findings could suggest that PTL programming acted as a barrier to further development of PSS for TG1. It also highlights the need for long-term and sustainable programming for children who have experienced a traumatic event.

Limitations

This research design does not classify a true delayed treatment design due to the absence of a midpoint assessment of PSS and the data for TG2 were not collected at the same time as TG1. A true delayed treatment framework would include a pre-, mid-, and post-evaluation structure, in which two nonequivalent groups receive the treatment at different times and in a delayed sequence. For example, one group has the treatment while the other serves as a control, and then the control group at midpoint receives the treatment. However, the program design did not budget for a midpoint evaluation due to financial limitations. The analysis can suggest but cannot confirm significance.

Figure 1: Graph of TG1 & TG2 Pre- to Post-Intervention Estimated Marginal Means





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