PSYCHOSOCIAL ADJUSTMENT AND SOCIAL REINTEGRATION OF CHILD EX-SOLDIERS IN SIERRA LEONE

Wave II Follow-Up Analysis

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Executive Summary:

This report presents initial data from a follow-up study of youth who had been associated with the RUF rebel group in Sierra Leone and were subsequently part of the International Rescue Committee's (IRC) community reintegration program following formal disarmament and demobilization in the country. Also added to this wave of data collection was a new sample of ex-RUF youth from the Makeni region that self-reintegrated without the benefit of organized support and services such as those offered by the IRC in its area of operations. These services included initial material and psychosocial assistance in Interim Care Centers, family tracing and community follow-up. The addition of the Makeni sample provides a valuable comparison between youth who received formal reintegration services contrasted with youth who spontaneously went home without any special assistance or services. This study is also unique in its ability to examine community, family and child-level variables in relationship to reintegration and psychosocial adjustment in young people returning to their home villages after their association with rebel fighting forces.

Background

According to the first global survey published by the Coalition to Stop the Use of Child Soldiers in June 2001, more than half a million children were recruited into government forces and armed groups in eighty seven countries during the last decade. Every day an estimated 300,000 child soldiers are involved in armed conflicts in more than thirty countries worldwide. The conflict in Sierra Leone between the Revolutionary United Front (RUF) and the government from 1991-2002 resulted in the forceful conscription and "voluntary" joining under duress of thousands of children into different fighting forces and paramilitary groups. Children of all ages were abducted or conscripted and both girls and boys were forced to fight on the frontline or work as porters, cooks, guards, messengers, servants, human shields and sexual slaves. During their time with the fighting forces, children were deprived of the care and protection of their families, denied education and other developmental opportunities and were exposed to physical injuries, severe psychological hardship and death.

With the signing of the Abuja agreements in November 2000 and May 2001, the National Center for Disarmament, Demobilization and Reintegration (NCDDR) developed a new program of demobilization in conjunction with the United Nations Mission in Sierra Leone (UNAMSIL) and the warring armies (the RUF and Civil Defense Forces (CDF)). From the re-commencement of demobilization activities in May to March 2002, over 4,000 children were officially demobilized nationwide. During this period, the IRC facilitated and assisted UNAMISIL and NCDDR with the screening, demobilization and immediate emergency care of 1,458 of the national total.

The IRC's Rehabilitation and Reintegration Programs in Sierra Leone

The IRC rehabilitation and reintegration programs while recognizing and addressing the need for individual attention and support both in the initial phase of demobilization and for finding specific educational or other opportunities once home, stresses the pre-eminent role of communities in helping the child assume a civilian identity again, and ultimately achieve successful psychosocial reintegration. The strategy specifically includes the following components: 1) Immediate medical and psychosocial care through interim care centers to support children during this transition period and prepare them for reintegration into civilian communities; 2) Sensitization of communities of return to the promote forgiveness and acceptance; 3) Family tracing and reunification; 4) Support to communities so that they are equipped to reintegrate the child; and 5) Individual follow-up.

The IRC was motivated to pursue this research in order to further understand the factors that influence positive psychosocial adjustment and successful community reintegration among former child soldiers in order to ensure that the most optimal interventions are being used. In the longitudinal research, several factors thought to promote better emotional and social outcomes in youth affiliated with the fighting forces in Sierra Leone were given particular attention. These potential protective factors include participation in rehabilitation programs, job skills training, return to school or non-formal education, social support from caregivers and peers, and participation in traditional cleansing ceremonies. Outcomes of interest include emotional adjustment and reports of community acceptance by both the young person and caregivers. The information gained in this study will be valuable to aid agencies in designing programs and policies to best assist former child soldiers in Sierra Leone and elsewhere.

Overall Research Goal: To further the global understanding of factors related to positive psychosocial adjustment and community acceptance among former child soldiers and to identify central variables to inform interventions for successful community reintegration.

Objectives:

1. To use participatory methods to develop valid survey instruments and methodologies for assessing the psychosocial adjustment and community acceptance of youth formerly affiliated with the fighting forces in Sierra Leone.
2. To gain a better understanding of the psychosocial impact of war among youth who have been affiliated with fighting forces.
3. To inform interventions designed to improve emotional and social adjustment in war-affected youth and adolescents.
4. To disseminate findings and make lessons learned from the research available to the policy and humanitarian aid communities including governments, NGOs, international organizations and academic audiences.

Methods
Study Intervention Sample
In baseline data collected in 2002, a sample of 260 former RUF youth and adolescents was obtained using a two-stage method of selection. First, registries were pooled to create an initial list of all youth who had been processed through the IRC Interim Care Centers (ICC) in Bo, Kenema and Kono districts within an eight-month time period from June 2001 to February 2002. This time period was selected to represent the most active period of demobilization via concerted and collaborative efforts by UN agencies, local government and NGOs. These lists were screened to make sure that they included only former RUF youth and adolescents originally from Sierra Leone for whom current contact information was available. Further screening criteria excluded any youth who were above the self reported age of 18 or had been diagnosed with a severe physical or mental disability (i.e. schizophrenia or a major disability such as cerebral palsy) as reported by program social workers. Because this list represented a sizeable enough population of former RUF young people for a longitudinal design, the entire list of names, rather than a sample from it, was selected for entry into the study. At the baseline period of assessment, this sample contained 260 former RUF youth, 88% males and 12% females, all brought through the IRC's ICC centers between June of 2001 and February of 2002. In 2002, the average age of the ex-RUF sample was 15.1 years. Seventy-eight percent joined the armed forces at age 12 or under and 11% were soldiers for more than seven years.

Follow-up Intervention Sample
Follow up surveys of youth and their caregivers were conducted again in the spring and summer of 2004. Completion of the follow up data collection was compromised by the tragic death of the IRC country director and the financial controller in a helicopter crash during the follow up data collection. Some loss-to-follow up was expected, but compounded by logistical problems which prevented the reassessment of about n = 104 Ex-RUF who had been served by the IRC rehabilitation programs in the Kono region of Sierra Leone. Thus, the final Ex-RUF sample served by DDR programs for whom complete information is available at baseline and follow up is n=156 (40% lost to follow up).

Comparison Sample from Wave I, 2002 Study
A comparison sample of 138 youth who had not been affiliated with rebel forces from the same villages as those who were surveyed in the spring of 2002. The comparison sample was selected using a randomization strategy whereby a house in the same village as each ex-RUF youth in the intervention sample was identified. A young person who matched the general age and gender of the former RUF youth and their index caregiver were invited to be interviewed. Interviews revealed that fourteen members of the comparison group sample were actually ex-

RUF members. These participants were removed from the analysis to avoid confounding. There was a great deal of loss-to-follow up in the comparison sample in 2005 and only n = 38 of these youth were able to be re-assessed in the 2004 follow up. Analyses involving the remaining n = 38 youth who were able to be re-surveyed in 2004 are not included in the present report given that 72% were lost to follow up and comparability of this sample to the Intervention sample is very poor.

Ex-RUF with no Formal Intervention Comparison Group – Wave II, 2004 Study
In the follow up data collection planned for 2003-2004, a more useful comparison group was added. Such a comparison group had not been possible due to funding and logistical constraints during the baseline data collection. The comparison sample added in 2003 was comprised of a sample of N=135 former RUF youth who returned directly to their villages without receiving any formal NGO demobilization and reintegration assistance. This sample was obtained from the Makeni region using a two-stage method of selection. First, registries were created through UN and NGO contacts to develop an initial list of all youth who had resettled directly home without receiving any services specific to child soldiers between the eight-month time period from June 2001 to February 2002. These lists were screened to make sure that they included only former RUF youth originally from Sierra Leone for whom current contact information was available. These lists were further screened to ensure that participants received no other social services specific to former child soldiers. Additional screening criteria excluded any youth who were above the self reported age of 18 or had been diagnosed with a severe physical or mental disability (i.e. schizophrenia or other psychotic disorder or major disability such as cerebral palsy) as reported by village social workers.

Baseline Survey Measures
The 2002 baseline survey collected data on demographic information, exposure to war-related violence, family separation and social support. The survey also included a measure of psychosocial adjustment based on standardized child mental health measures and adapted using participatory methods that involved Sierra Leonean families, young people, educators and child care professionals (MacMullin & Loughry, 2004).

Follow Up Survey Measures
The 2004 follow-up survey repeated baseline measures and added variables to examine individual war-related traumas in depth as well as expand the information available on community variables and NGO services. To better assess individual-level exposures, the 2004 study added an adapted version of the Child War Trauma Questionnaire (Maksoud & Aber, 1996) which includes a detailed assessment of children's exposure to violence as well as perpetration. The traumatic exposures included were adapted to include events more appropriate to Sierra Leone (it was initially developed for Lebanon). For example, items on bombing and shelling were removed and items on cutting (machete attacks), raids on one's village and sexual assault were added.

        The follow-up survey also included two additional measures of mental health distress, a reduced version of the PTSD-RI. Post-Traumatic Stress Disorder Reaction Index Revision (PTSD-RI) (Pynoos et al, 1998) and The Hopkins Symptom Checklist/SF-25 (Derogatis 1974) was administered to both adolescents and caregivers. Family variables also included a family separation assessment, and measures of relative disadvantage as well as primary caregiver's education and occupation. Community variables added in wave II included measures of community acceptance, collective efficacy (drawn from the work of Dr. Felton Earls in Chicago and Tanzania) and measures of stigma/discrimination (Williams et al., 1997). Data in both Waves are also available on access to life opportunities such as education and skills training. The Wave II follow-up also included measures of exposure to non-governmental agency

services and specific details on reintegration program components such as number of follow-up visits and whether or not there was a program-supported community project established in the village. Also included was whether or not a child had had exposure to a traditional cleansing ceremony. The table below provides details of the specific constructs of interest, measures and source of data collection contained in the baseline and follow-up data sets.

Table 3. Specific constructs of interest, measures and source of data collection contained in the baseline and follow-up data sets, Sierra Leone

Instrument	Variable of interest	Waves	Respondent
Demographics	Social disadvantage/ Descriptive	I/II	Caregiver, Adolescent
NGO Services	Exposure to NGO services (formal demobilization, rehabilitation, presence of NGO program in village)	II	Caregiver
School, training and work access	Meaningful community engagement	I/II	Caregiver, Adolescent
Adapted Child War Trauma Questionnaire (Maksoud & Aber,1996)	War-related exposures, family separation, perpetration of violence	II	Caregiver, Adolescent
Family acceptance	Degree of acceptance, fair treatment, integration in current family placement	II	Adolescent
Sierra Leone psychosocial adjustment protocol (Loughry & MacMullin 2004)	Emotional and behavioral problems & prosocial behaviors and attitudes	I/II	Adolescent
Coping methods checklist	Coping	II	Adolescent
HSCL SF 25	General functioning, mental health	II	Caregiver, Adolescent
PTSD-RI	Symptoms of post-traumatic stress disorder	II	Adolescent
Village relations	Community acceptance/rejection	I/II	Caregiver, Adolescent
Village Collective Efficacy	Social cohesion and informal social control	II	Caregiver, Adolescent
Traditional cleansing ceremony	Whether or not the child had a history of a traditional cleansing ceremony upon return to village	II	Caregiver, Adolescent
Qualitative Interview	Local definitions of coping, social and emotional adjustment, community acceptance	II	Caregivers, Adolescents, Village Chiefs, Community Members

Psychometric Properties of Psychosocial Measure at Follow-Up
Data on the performance of the psychosocial measure in the former RUF and comparison samples in the spring of 2002 indicated that some subscales were still not functioning with adequate psychometric properties in this Sierra Leonean population. Upon using this 52-item scale of psychosocial functioning in the present data collection reported here, each scale was found to perform much more adequately than had been observed in the prior work of MacMullin & Loughry (2004). The anxiety subscale contained 8 items and had good internal consistency with a Chronbach's correlation alpha coefficient of .71. The depression subscale contained 7 items and had marginal internal consistency with a Chronbach's correlation alpha coefficient of 0.56. The hostility subscale contained 13 items and also displayed good internal consistency (Cronbach's alpha= 0.87). The pro-social subscale contained 11 items and had good internal consistency (Cronbach's alpha= 0.78). The confidence subscale contained 8 items and had good internal consistency (Cronbach's alpha= 0.71). These subscales were used for all analyses.

Statistical Methods
The goals of the data analyses are: a) to describe the distribution of emotional and behavioral problems in this population of former child soldiers and their comparison peers; b) to examine the relationship between potentially protective factors including coping, social supports, community connectedness, community activities, youth services, participation in education and community acceptance on social and emotional adjustment; and c) to examine the relationship between potential risk factors including family separation, exposure to and perpetration of violence, drug use and discrimination/stigma on social and emotional adjustment in these adolescents.

We hypothesized that theorized protective factors (such social support, NGO intervention, participation in job skills training or education programs, and participation in traditional healing ceremonies) would be associated with lower levels of emotional and behavioral problems and higher community acceptance and risk factors (such as exposure to violence, length of time with the RUF, perpetration of violence) with higher levels of psychosocial problems and lower community acceptance. We examined univariate, bivariate and multivariate associations between study variables. Correlation coefficients were used to examine relationships between all continuous predictors. Spearman correlations were used to examine relationships between continuous variables and dichotomous variables. T tests were used to test differences in means on outcomes and predictor variables between the ex-RUF with formal reintegration services vs. those who spontaneously reintegrated. For the Ex-RUF youth and in the sample who had data available at two points in time, we calculated difference scores between the Wave I and Wave II data in order to examine change over time.

Ethics
The IRC Children Affected by Armed Conflict Director, Sierra Leone DDR staff and the Research Consultant conducted an internal review and discussion of the ethics of the proposed research and research materials including the survey instruments, consent forms and proposed methods. The survey and informed consent form were revised for easy comprehension and brevity. Certain items about children's exposure to violence were revised to make them less intrusive and coded identifiers were taken to ensure confidentiality of records and safe storage of all research materials.

All research staff participated in training on ethical practices in working with research participants. The work of the research team in the field was conducted to preserve the rights to privacy and confidentiality of research subjects. Prior to conducting the survey in early 2002,

the Sierra Leonean research team determined a process to best introduce this project to teens and their families in a way that respected cultural norms about family and community decision-making. First, the process of consent involved village and/or neighborhood meetings to introduce and explain the research. Secondly, the parent/guardian informed consent form and child/teen informed assent form were read and discussed before a signature was given. Great efforts were made to inform participants of the general intent of the study and its longitudinal nature, including the intent to contact participants for future interviews. Teams of social workers traveled with the research team to provide follow up and triage for any participants who experienced distress during the interview or who required further triage due to concerns about immediate risk of harm.

This research was reviewed and approved by the Internal Review Board (IRB) of Boston University Medical School/Boston Medical Center in December 2003.

There were a total of n = 323 children and adolescents interviewed in the 2004 survey across all groups. Of the Ex-RUF for whom complete information is available at both baseline and follow up (n =140), 10% (n = 14) are female and (n=126) 80% male who had been served by the IRC reintegration program in 2001 and 2002. At follow-up, 13% of the Ex-RUF who had reintegration services were ages 8-14 and 69% were ages 15-19 (18% were missing information for age). Of the n = 38 comparison group members who were able to be re-contacted, 12% were females (n = 4) and 89% (n = 30) were males. At follow-up, 26% of the non-RUF comparison group were ages 8-14 and 58% were ages 15-19 (16% were missing age information). The sample of Ex-RUF who were not exposed to specific reintegration services from the Makeni region (n =129) comprised 51% females (n = 66) and 49% males (n = 63). In the 2004 survey, 36% of the self-returned Ex-RUF without reintegration services were ages 8-14 and 59% were ages 15-19 (5% were missing age information). (See Table 1 below for specifics).

Table 1: Demographics by research group at follow up

	IRC Intervention Group (n = 156)	**Non-RUF (n = 38)**	**Ex-RUF self returned without Reintegration services (n = 129)**	**Difference (chi square)**

Age Group				P < 0.0001
8-14	21 (13%)	10 (26%)	46 (36%)	
15-19	107 (69%)	22 (58%)	76 (59%)	
Missing	28 (18%)	6 (16%)	7 (5%)	
Gender				P < 0.0001
Male	126 (81%)	34 (89%)	63 (49%)	
Female	30 (19%)	4 (11%)	66 (51%)	
Religion				P = 0.15
Christian	71 (46%)	24 (63%)	64 (50%)	
Muslim	85 (54%	14 (37%	65 (50%)	
Ethnicity				P < 0.0001
Fula	4 (3%)	0 (0%)	7 (5%)	
Kissi	5 (3%)	2 (5%)	0 (0%)	
Kono	87 (56%)	26 (68%)	3 (2%)	
Koranko	1 (1%)	2 (5%)	1 (1%)	
Limba	8 (5%)	0 (0%)	33 (26%)	
Loko	0 (0%)	0 (0%)	2 (2%)	
Madingo	5 (3%)	1 (3%)	6 (5%)	
Mende	32 (20%)	7 (19%)	6 (5%)	
Sherbo	1 (1%)	0 (0%)	0 (0%)	
Susu	1 (1%)	0 (0%)	7 (5%)	
Temne	7 (4%)	0 (0%)	62 (49%)	
Jhemne	0 (0%)	0 (0%)	2 (2%)	
Yaluaika	1 (0%)	0 (0%)	0 (0%)	
Missing	4 (3%)	0 (0%)	0 (0%)	
Literacy				P = 0.47
Poor/very limited	11 (7%)	4 (11%)	15 (12%)	
Basic/functional	73 (47%)	17 (44%)	60 (46%)	
Moderate	35 (22%)	12 (32%)	26 (20%)	
Excellent	18 (12%	4 (11%)	10 (8%)	
Missing	19 (12%)	1 (2%)	18 (14%)	

Findings
Psychosocial Adjustment Over Time:
There were no significant changes in the mean psychosocial subscale scores for the ex- RUF served by IRC reintegration programs between Wave I and Wave II. In addition, examination of mean scores by gender did not reveal any significant differences. This finding indicates general stability in the level of problem and pro-social behaviors over time among the ex-RUF served by IRC programs.

Table 1: Psychosocial Scores for ex-RUF in Formal DDR Program at Baseline & Followup

Psychosocial measures	Baseline	Follow-up
Hostility	Mean: **20.6** 95% CI: (19.6, 21.5)	Mean: **21.6** 95% CI: (20.5, 22.7)
Anxiety	**19.5** (18.5, 20.4)	**20.3** (19.5, 21.0)
Depression	**12.1** (11.6, 12.7)	**12.2** (11.7, 12.8)
Confidence	**23.6** (22.8, 24.4)	**24.8** (24.1, 25.6)
Pro-social	**35.4** (34.5, 36.3)	**35.8** (35.0, 36.6)

Psychosocial Measures at Follow-Up:
Given the significant imbalance between age and gender among the sample of Ex-RUF who had some exposure to IRC reintegration services versus those who self-returned (Makeni), all comparisons between groups are presented controlling for age and gender.

**Comparing the IRC Intervention Group with the Self-Returned Group**
Upon adjusting for age and gender, ex-RUF with IRC intervention had significantly lower hostility and depression subscale scores compared to the self-returned ex-RUF group ($r = -0.16$, $p = 0.0001$, $r = -0.20$, $p = 0.0084$, respectively). Ex- RUF with IRC intervention also had significantly higher average confidence scores compared to self-returned ex-RUF ($r = 0.15$, $p<.05$). In terms of pro-social behaviors, former RUF with IRC rehabilitation services had significantly higher scores compared to self-returned RUF program ($r = 0.23$, $p = 0.0008$).

Relationships Among Risk and Protective Factors and Psychosocial Outcomes

**Exposure to War-Related Violence**
There were no differences between the IRC intervention group versus the self-returned group in terms of witnessing or victimization by violence. The IRC intervention group reported a lower level of perpetrated violence (Figure 1) but this difference was not significant at $p < 0.05$. Exposure to violence (witnessing violence or perpetrating violence) was significantly associated with an higher average level of symptoms on the Hopkins Symptoms Checklist (HSC) as well as an higher average psychosocial subscale scores for hostility ($r = 0.20$ and $r = 0.39$, respectively and $p < 0.05$ for both). Witnessing violence was significantly associated with higher average levels of PTSD symptoms ($r = 0.20$, $p < 0.05$) and hostility ($r = 0.24$, $p < 0.05$) as well as a higher average score on the HSC ($r = 0.21$, $p < 0.05$). Being a victim of violence was significantly associated with higher subscale scores for hostility ($r = 0.16$, $p < 0.05$). Perpetrating violence was significantly associated with higher average subscale scores for hostility ($r = 0.41$, $p < 0.05$), depression ($r = 0.26$, $p < 0.05$), anxiety ($r = 0.27$, $p < 0.05$), PTSD ($r = 0.39$, $p < 0.05$) and an increase in score on the HSC ($r = 0.35$, $p < 0.05$). Perpetrating violence was also significantly associating with lower average levels of community acceptance

(r = -0.21, p < 0.05) and family acceptance (r = -0.19, p < 0.05) upon adjusting for age and gender.

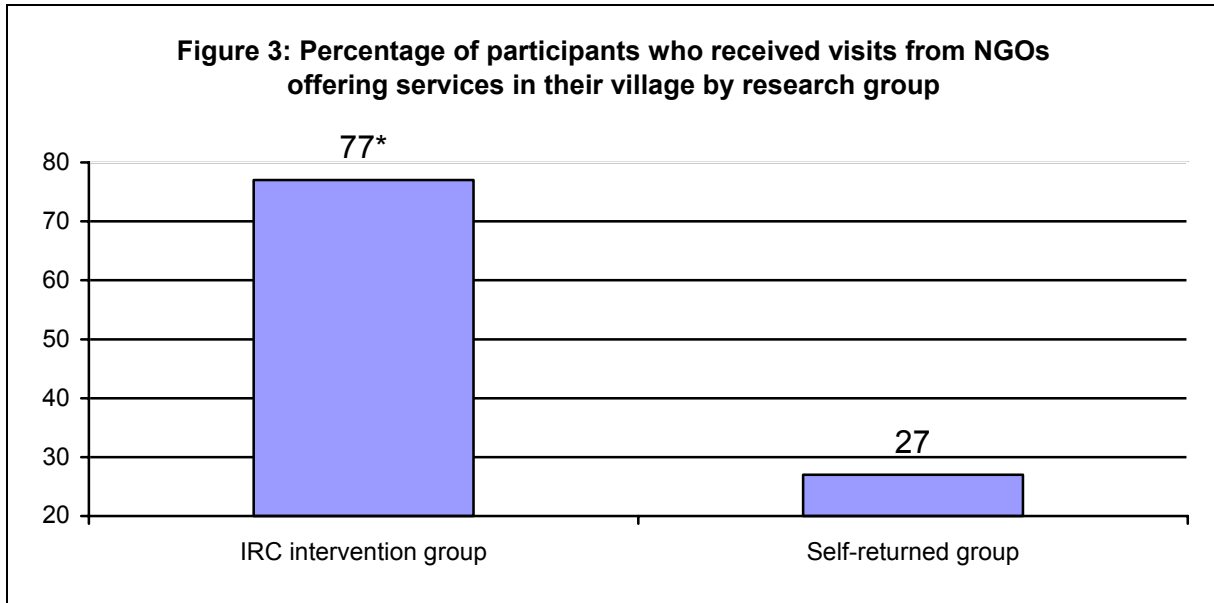**Figure 1: Exposure to violence by research group**
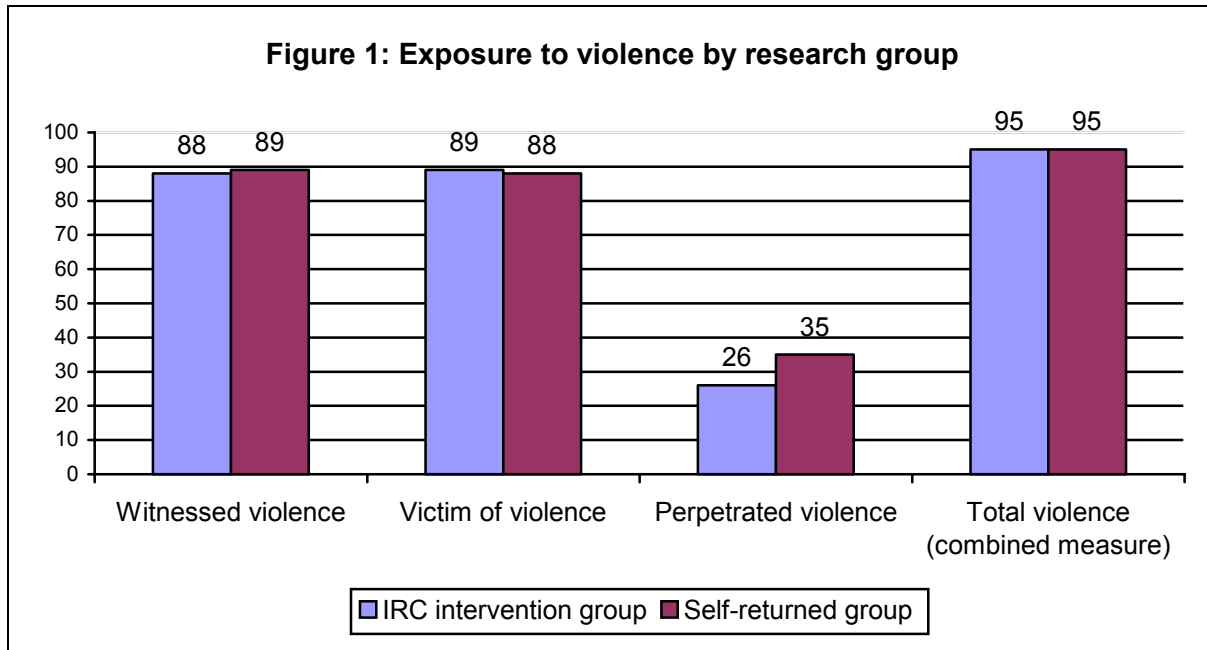
Traditional Healing Ceremonies
Youth from the IRC intervention group were slightly more likely to have had a traditional cleansing ceremony (Figure 2). However, this difference was not significant at $p < 0.05$. In the full sample of Ex-RUF, having had a traditional cleansing ceremony was associated with higher average levels of family acceptance (r = 0.22, p < 0.05) and higher average scores on the prosocial subscale (r = 0.30, p 0< 0.05) and confidence subscale (r = 0.23, p < 0.05) of the locally validated psychosocial measure.

Figure 2: Percentage of participants who received a post-war traditional healing ceremony by research group
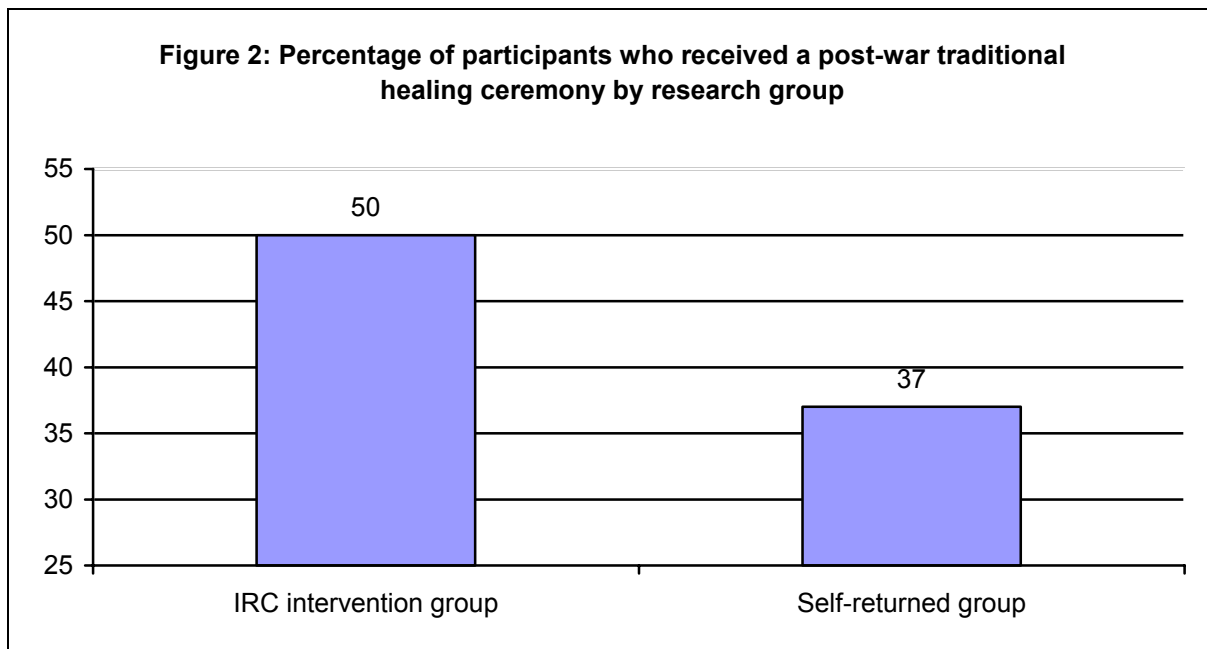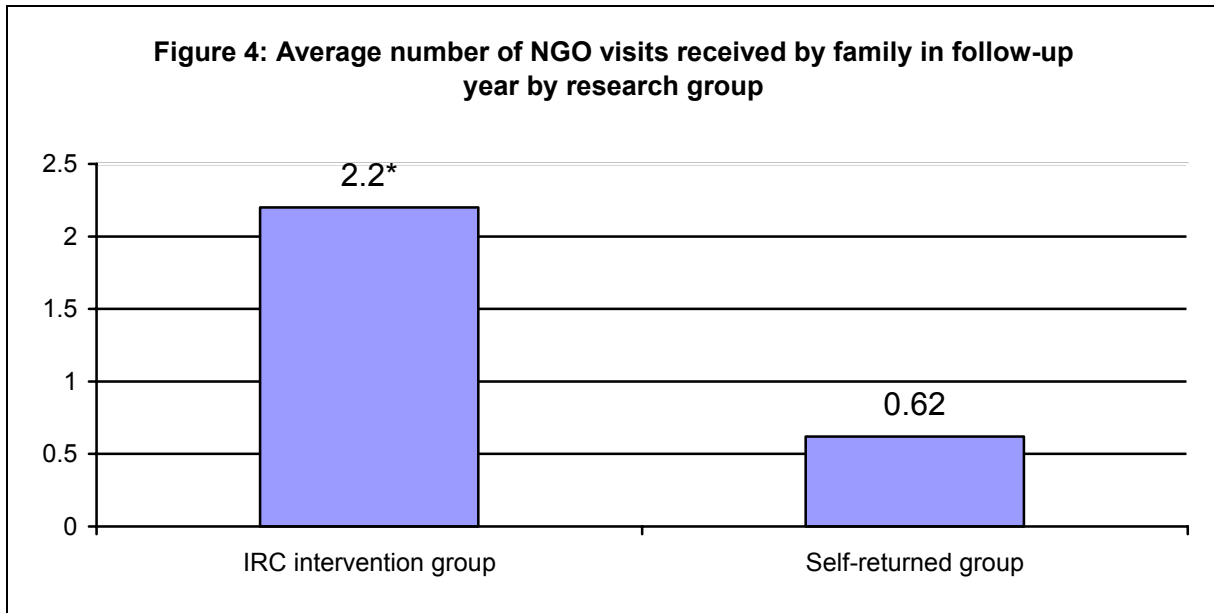
NGO Services

As expected, the IRC intervention group reported that NGOs were present in their village at significantly higher levels than the self-returned group (Figure 3). Although ex-RUF youth in the self-returned group reported some visits by NGOs, the overall number of NGO visits was significantly higher among the IRC intervention group of ex-RUF (Figure 4). In the full sample of Ex-RUF, a visit from a NGO was found to be significantly associated with higher community acceptance, lower PTSD and higher levels of well being (as measured by the Hopkins Symptom Checklist). NGO visitation was also found to be significantly associated with higher levels of confidence and pro-social behaviors and lower levels of depression and hostility (Table2).

Figure 3: Percentage of participants who received visits from NGOs offering services in their village by research group

77* (IRC intervention group)
27 (Self-returned group)

*Difference significant at $p < 0.05$.

Figure 4: Average number of NGO visits received by family in follow-up year by research group

2.2* (IRC intervention group)
0.62 (Self-returned group)

*Difference significant at $p < 0.05$.

Table 2: Average Measures for All ex-RUF by NGO Presence

Psychosocial measures	Received NGO visit(s)	Did not receive NGO visit(s)
Hostility*	Mean: **21.4** 95% CI: (20.4, 22.4)	Mean: **24.1** 95% CI: (22.9, 25.2)
Anxiety	**19.7** (19.0, 20.4)	**20.8** (20.1, 21.6)
Depression*	**12.1** (11.5, 12.6)	**13.6** (13.0, 14.2)
Confidence*	**24.9** (24.3, 25.5)	**22.9** (22.2, 23.7)
Pro-social*	**35.8** (35.1, 36.5)	**33.2** (32.2, 34.2)
Community Acceptance*	**16.5** (16.1, 16.9)	**15.4** (14.8, 16.0)
Family Acceptance	**16.9** (16.5, 17.3)	**16.3** (15.8, 16.8)
PTSD*	**20.0** (19.1, 20.9)	**22.8** (21.8, 23.7)
Hopkins Symptom Checklist*	**45.2** (43.0, 47.4)	**51.8** (49.2, 54.4)

*Difference significant at $p < 0.05$.

Family Separation

The self-returned group was not significantly more likely to have returned to live with one or both parents following a separation during the war (Figure 5). In the full Ex-RUF sample, adjusting for age and gender, being returned to live again with one or both parents following a separation due to the war was associated with higher family acceptance ($r = 0.20$, $p < 0.05$) and lower average subscale scores for depression and anxiety ($r = -0.15$ and $r = -0.15$ respectively, $p < 0.05$). As expected, being returned to live again with one or both parents following a separation due to the war was also associated with the presence of NGOs in the village and the overall number of NGO visits ($r = 0.18$ and $r = 0.16$ respectively, $p < 0.05$).

Figure 5: Percentage of participants who returned to live with one or both parents following a separation during the war by research group

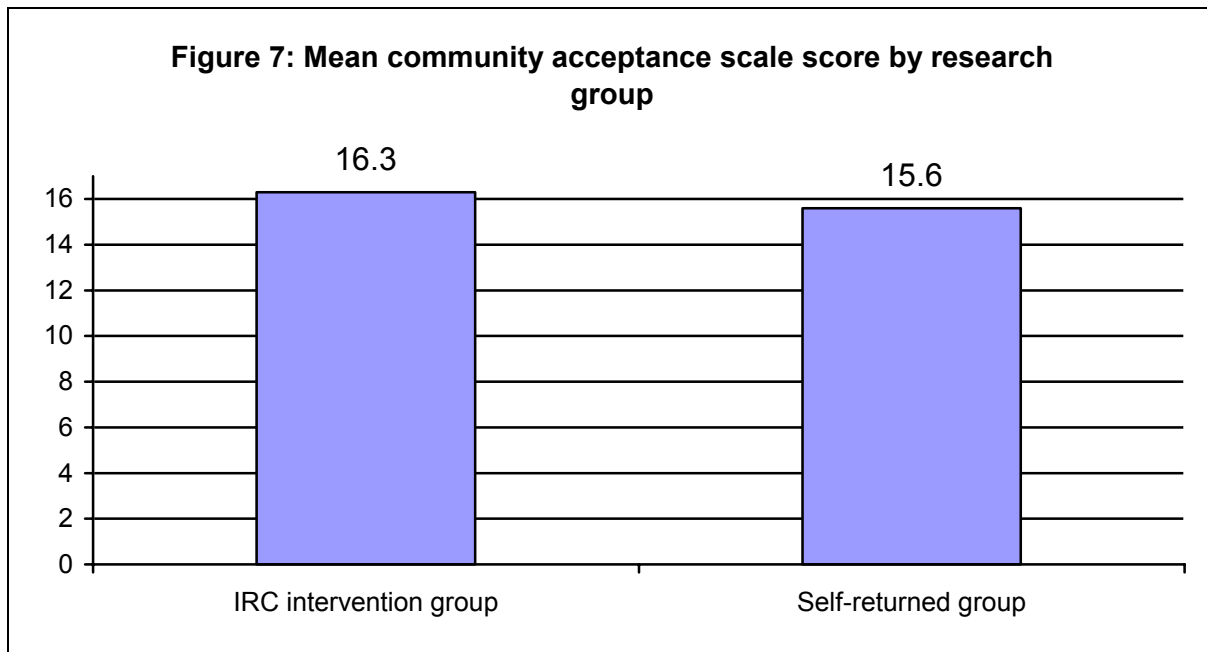|	IRC intervention group	Self-returned group
Percentage	26	31
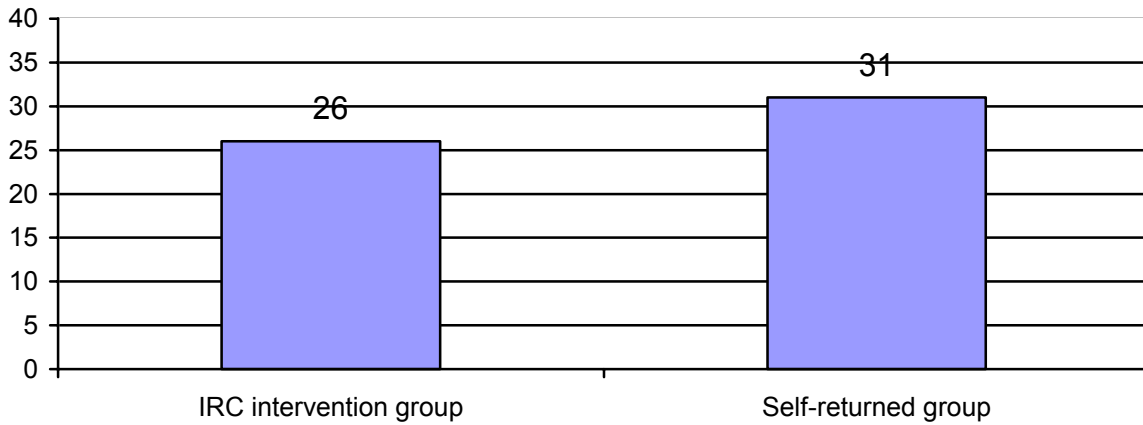
Family Acceptance

The IRC intervention group had similar mean scores (no statistically significant difference) on family acceptance score compared to the self-returned group (Figure 6). In the full sample, adjusting for age and gender, family acceptance was significantly associated with lower average levels of PTSD symptoms ($r = -0.33$, $p < 0.05$) and HSC (-0.22, $p < 0.05$) scores, lower average subscale score for hostility ($r = -0.36$, $p < 0.05$), depression ($r = -0.35$, $p < 0.05$) and anxiety ($r = -0.26$, $p < 0.05$). Higher average levels of family acceptance were also associated with higher average subscale scores for pro-social behavior ($r = 0.26$, $p < 0.05$) and confidence ($r = 0.23$, $p < 0.05$) (Table 2-please see attached document).

Figure 6: Mean family acceptance scale score by research group controlling for age and gender

	IRC intervention group	Self-returned group
Mean family acceptance score	16.8	16.3
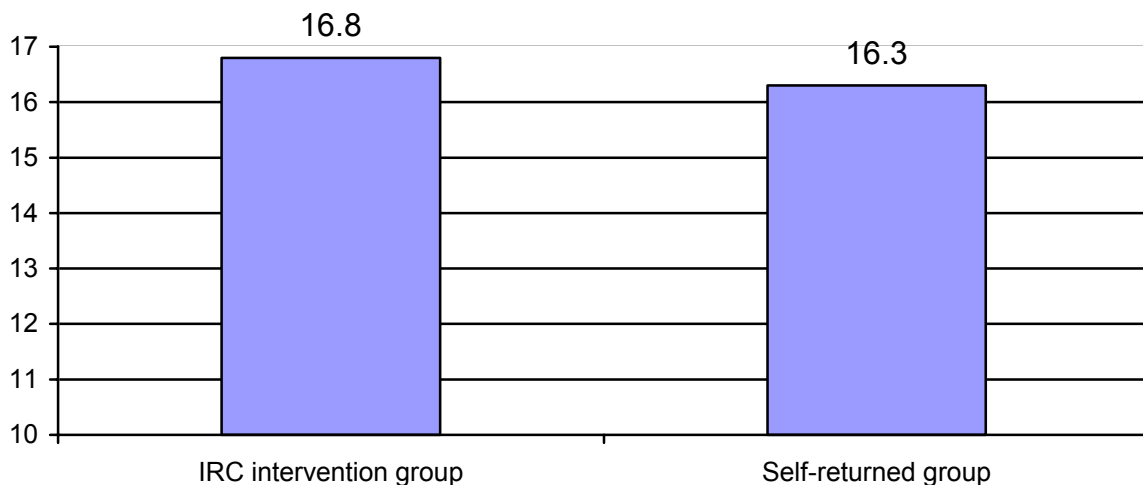
Community Acceptance

There were no statistically significant differences between the IRC intervention group and self-returned group on community acceptance scores (Figure 7). In the full Ex-RUF sample, upon adjusting for age and gender, community acceptance was significantly associated with lower average levels of PTSD symptoms ($r = -0.37$, $p < 0.05$) and HSC (-0.29, $p < 0.05$) scores, lower average subscale score for hostility ($r = -0.42$, $p < 0.05$), depression ($r = -0.40$, $p < 0.05$) and anxiety ($r = -0.23$, $p < 0.05$). Higher average levels of family acceptance were also associated with higher average subscale scores for pro-social behavior ($r = 0.29$, $p < 0.05$) and confidence ($r = 0.23$, $p < 0.05$) (Table 2-please see attached document).

Figure 7: Mean community acceptance scale score by research group

Discrimination:

Analyses by self-report of having experienced discrimination (as measured on the adapted scale by Williams et al. 1997) were conducted among the full sample of ex-RUF (both the IRC intervention group and the self-returned group). T tests comparing mean scores on all psychosocial measures by self-report of discrimination indicated strong relationships across nearly all measures. On average, ex-RUF youth who self-reported discrimination showed higher mean levels of hostility, anxiety, depression on the Sierra Leone psychosocial adjustment measure and higher levels of PTSD symptoms on the adapted PTSD-RI and distress on the HSCL. Although self-report of discrimination was not significantly associated with confidence subscales on the Sierra Leone psychosocial adjustment measure, youth who reported not experiencing discrimination had higher average subscale scores for pro-social attitudes and behaviors. Not surprisingly, youth who reported not experiencing discrimination also had higher average scores for community acceptance.

Table 3: Average Measures for All ex-RUF by Discrimination

Psychosocial measures	Experienced any discrimination n = 208	Did not experience discrimination n = 65
Hostility*	**24.1**	**18.0**

	(23.2, 24.9)	(17.0, 19.1)
Anxiety*	**20.9** (20.3, 21.5)	**18.3** (17.5, 19.2)
Depression*	**13.5** (13.0, 13.9)	**10.8** (10.1, 11.4)
Confidence	**23.7** (23.1, 24.2)	**25.0** (24.0, 25.9)
Pro-social*	**33.9** (33.2, 34.7)	**36.7** (35.8, 37.7)
Community Acceptance*	**15.5** (15.1, 15.9)	**17.5** (17.2, 17.8)
Family Acceptance*	**16.3** (15.9, 16.7)	**17.6** (17.2, 18.0)
PTSD*	**22.7** (21.9, 23.4)	**16.9** (16.1, 17.7)
Hopkins Symptom Checklist*	**51.8** (49.9, 53.6)	**37.3** (35.1, 39.6)

*Difference significant at $p < 0.05$.

Discussion

These data present important evidence of correlates of both vulnerability and resilience in ex-RUF youth who have returned to their communities in post-conflict Sierra Leone. These findings present an initial view into a rich array of data that were collected. Of particular interest in these findings is the observation that measures of mental health symptoms as well as prosocial behaviors maintained reasonable stability over time in the IRC intervention group. Without having baseline measures on the comparison group from Makeni, it is hard to know if these scores would have naturally increased, decreased or maintained stable with time. Nonetheless, it is valuable to know that there is relative stability in the psychosocial status of children in the IRC intervention group sample with average scores on psychosocial adjustment remaining more or less the same between the 2002 and 2003 follow-up survey.

When compared to the sample from the Makeni region who did not receive formal NGO rehabilitation or reintegration services, receipt of IRC services was correlated with an array of positive mental health characteristics in this sample. For instance, recipients of IRC services exhibited significantly lower scores on hostility and depression. Ex-RUF who had had IRC intervention services also had higher average confidence scores and prosocial behavior scores.

In the full Ex-RUF sample, other risk factors such as exposure to violence and perpetrating violence were associated with negative mental health symptoms. Similarly, protective factors such as family acceptance and having had a traditional healing ceremony were also associated with higher average prosocial and confidence scores. Family acceptance, being returned to live with one or both parents, community acceptance and not having experienced discrimination were also associated with lower average mental health symptoms in domains such as depression and anxiety for all ex-RUF.

Also interesting is the finding that the presence of any NGO services (not just IRC services) in a village was predictive of lower average scores on hostility, depression, PTSD symptoms and overall distress as measured on the Hopkins Symptom Checklist. The presence of NGOs providing services was also associated with higher average scores on confidence and prosocial behaviors in the full sample.

In summary, this research has important implications for informing services for children affiliated with the fighting forces in Sierra Leone. Given the limited research that has addressed

modifiable risk and protective factors in the mental health of war-affected youth, the findings presented here provide important starting point for understanding variables that might be leveraged in the design of future services to assist former child soldiers in Sierra Leone. These dynamics also point to the need to conduct follow up assessments of this cohort to understand the variables that predict trajectories of resilient developmental and mental health outcomes over time. Such information would inform future prevention and intervention efforts in Sierra Leone as well as assist in the development of models to be tested in other conflict zones.

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