



## Review Article

# The Psychological Impact of War and Abduction on Children in Northern Uganda: A Review

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### Abstract

**Objectives:** In more than two decades northern Uganda was affected by the war between the government and the LRA. Children were abducted and affected during the war, but what is the psychological and social impact of war on the children?

**Methods:** In this study we reviewed 40 epidemiological trauma studies conducted in Uganda from 2004-2014 using databases.

**Results:** The psychological impact was found in many different domains ranging from mental health problems like PTSD, depression, anxiety, and psychosis to suicidal ideation, alcohol abuse, partner violence, child abuse, and feelings of guilt and revenge, furthermore, many experienced problems when returning to their home communities. Uganda only has few mental health workers, few clinical facilities and lack medication to treat mental health problems.

**Conclusion:** We therefore conclude that the prevalence of mental health problems continue to be high to this day, despite the war ending in 2007.

### Keywords

Uganda; Trauma; War; PTSD; Anxiety; Depression; Children

## Introduction

The international human rights law declares 18 as the minimum legal age for recruitment and use of children in hostilities [1]. The recruitment and use of children under the age of 15 as soldiers, is prohibited under International Humanitarian Law and is defined as a war crime by the International Criminal Court (ICC) as stated by the United Nations [1] (UN). However, the UN defines a child soldier below 18 years of age:

*“A child associated with an armed force or armed group refers to any person below 18 years of age who is, or who has been, recruited or used by an armed group in any captivity, including but not limited to children, boys and girls, used as fighters, cooks, spies or for sexual purposes” [2].*

Africa has the largest number of child soldiers in the world [3]. In

Uganda, the conflict between the southwest and northern region of Uganda was led by Yoweri Museveni and Joseph Kony respectively. For more than two decades the spiritual leader Joseph Kony of the northern Acholi sub-region, fought the government through a guerilla force named the Lord's Resistance Army (LRA). While the actions of the LRA were brutal and cruel, many still perceived them as a political and rational organization that fought for the rights of northern Uganda. Nonetheless, the atrocities committed against the civilians of the region led to the unpopularity of the LRA [4]. Due to this unpopularity of the LRA in Uganda, Kony's military options were limited. However, interference from neighbouring Sudan and abduction of youths from northern Uganda by the LRA, helped maintain enough supplies and recruits to make the war last from 1986 to 2007, when the LRA leaders are believed to have retreated to Congo [4].

An estimated 25,000 children were abducted by the LRA from the beginning of the conflict up until 2007. Many abducted children were forced to commit atrocities including combats, carrying out raids, kill and mutilate other abducted children and looting and burning houses. Children were furthermore forced to kill relatives as a way of initiating them into the LRA. Many children were themselves physically punished by being beaten, mutilation or trampling to death, either as a punishment or if they were unable to keep up with their units [5]. Many girls were assigned as rebels' wives and routinely raped. As a result they bore children of their abusers. Girls therefore often stayed in captivity longer than boys and because of this they often experienced more stigmatization and rejection at their return to their communities, especially the ones returning with babies [5].

Many civilians in northern Uganda lived in camps for internally displaced persons (IDPs) to avoid possible abduction or raids by the LRA. Despite the intention of protecting civilians, acute overcrowding and lack of accommodation, medical care, and nutrition characterized the camps [5].

Around the time the conflict in northern Uganda came to an end the WHO-AIMS report on Mental Health System in Uganda [6] estimated that the total number individuals working in mental health facilities or private practices per 100,000 population was 1.13, of which only 0.08 were psychiatrists and 0.01 were psychologists. In 2013 Uganda was still estimated to have less than 0.05 psychiatrists working per 10,000 populations in 2005-2012, with only 0.3 psychiatric beds per 10,000 populations [7-9]. The World Health Organization (WHO) has further estimated that there overall, in African countries, has been zero increase in the rate of psychiatrists per 100,000 populations in 2005-2018.

By the time the conflict in northern Uganda came to an end, studies of child soldiers and the consequences of their traumas where few in number 9. However, over the last decade numerous studies of the psychological consequences in northern Uganda have helped provide evidence to support the theory of traumatizing effect that war has on children. These studies have provided a wide range of knowledge on the many psychological effects that traumatising from such conflicts can lead to. Based on this knowledge, this study wishes to provide a summarized account for the comprehensive consequences that war can have by reviewing the numerous studies

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that have addressed this issue in the last decade. Due to the severity of the long lasting conflict in northern Uganda, the impact on the population is expected to be comprehensive and broad with a psychological impact on various domains including mental illness as well as social and emotional problems, among others.

## Methods

This review was conducted using a total of 40 studies that have all been conducted in Uganda during the period of 2004-2014. Studies all looked at war trauma and the psychological affect it has on children. Many of the included studies are conducted on adults or adolescents who were affected by the war when they were children.

## Search strategy

Searches were conducted in the electronic databases PsycINFO and PubMed. There was not placed any restrictions on publication dates. The search was conducted between August 2014 and December 2014. The following search terms were used in the search:

- PTSD, Trauma, Post-Traumatic Stress Disorder, Stress\*, Depression, Anxiety, mental health.
- Uganda, north\*, war\*, LRA.

Studies were further included by the use of snowballing technique where studies were selected based on references in the literature from PsycINFO and PubMed.

## Quality evaluation and criteria for including studies in this review

All studies included in this review were quantitative and they have all been conducted in northern Uganda with a main focus on war and trauma. All included studies have been peer reviewed. Studies regarding treatment or any kind of community trials were excluded from this review. This review contains all studies known to the authors that fulfil the inclusions. The studies included in this review can be seen in [Table 1](#). Some concepts might have similar meaning, but uses different terms in this review. This stems from the lack of a clear definition in the original articles, e.g. reception centre vs. rehabilitation centre [10,11].

## Results

### PTSD in civilians

The majority of studies on trauma in Uganda have been conducted on former abducted child soldiers. However, a few studies have focused on trauma among civilians in Uganda who were never abducted. One of the original studies made in Uganda was conducted by Neuner et al. [12] and concerned West Nile refugees in South Sudan and Uganda. The study examined the dose-response relationship of PTSD symptoms and the number of event types in a large survey, including Ugandan nationals. The study estimated the cumulative trauma exposure by assessing the number of different trauma event types experienced or witnessed. The number of lifetime trauma event types correlated with the frequency of experiences of intrusions ( $r=0.49$ ), hyperarousal ( $r=0.41$ ) and avoidance ( $r=0.47$ ), all  $p<0.001$  [12].

These findings indicate a near linear rise for increasing psychological strain with the number of traumatic event types, inducing prevalence rate of PTSD ranging from 23% (participants

reporting  $\leq 3$  traumatizing experiences) to 100% (participants reporting  $\geq 28$  traumatic event types in the past year) [12].

A similar study by Karunakara et al. [13] also investigated Sudanese nationals, refugees and Ugandans. They found a prevalence of 21% of Ugandans suffered from PTSD. They furthermore found that the likelihood of developing symptoms of PTSD increased with age and was significantly more common in women. Education, a salaried job, household possessions, and migration were found to be protective factors against PTSD. Witnessing traumatic events increased the risk of PTSD [13].

Comparing former abducted child soldiers with never abducted youths at the ages 14-18 years, Moscardino, Scrimin, Cadei, and Altoè [14] showed that youth Acholi people who were never abducted, had a high prevalence of PTSD symptoms along with an equally high prevalence of psychological distress, and behavioral and emotional problems [14].

Mandrup and Elklit [15] conducted a study on victimization and PTSD in a civilian sample of Ugandan youths consisting of senior 3<sup>rd</sup> year students. The study was conducted in three larger cities, the capital Kampala in central Uganda, Mbarara in western Uganda and Jinja in eastern Uganda. The aim of the study was to investigate the indirect and direct exposure to 20 potentially traumatic events and their relation with PTSD, as well as socio-economic status, coping styles, negative effect, and somatization, found that the participants on average had experienced 6.6 direct events and 7.2 indirect events [15].

Four direct traumatic events were significantly related to PTSD symptomatology: threats of violence, sexual abuse, severe childhood neglect, and bullying. Seven indirect traumatic events were also related to PTSD symptomatology; other serious accidents, near drowning, and physical abuse had a negative association, while rape, witnessing people injured or killed, severe childhood neglect, and bullying had a positive relationship with PTSD severity [15].

Further, Mandrup and Elklit found that students who did not live with their parents had experienced significantly more negative life events than children living with one or both of their parents  $\{F(2,404)=14.2; p<0.0005\}$ . A significant higher HTQ (Harvard Trauma Questionnaire) score was also found among students who did not live with their parents  $\{F(2,404)=4.95; p<0.008\}$ . Students who did not live with their parents also experienced more negative affect  $\{F(2,403)=3.79; p<0.05\}$  compared to students who lived with one or both their parents [15].

### Former abducted child soldiers

In the last decade a total of 20 studies have been conducted on former abducted child soldiers and the traumatizing effect of their experiences in northern Uganda. The first two studies were conducted in 2004 by Derluyn et al. [9] and Amone-P'Olak [16].

In 2004 little scientific research existed on PTSD in former child soldiers. This, however, was the aim of the study by Derluyn et al. along with a limited investigation of possible associations between demographic characteristics, experiences during abduction, and posttraumatic stress [9].

As seen in [Table 2](#), many of the studies were occupied with 'age of abduction' and 'duration of abduction' among their participants. In addition to this information, Ovuga et al. showed in 2008 that 5.8% of the participants had been born in captivity [11]. The duration of

**Table 1:** Epidemiological Trauma Studies in Uganda.

#	Study	Design	Population	Evaluation of PTSD Status	PTSD	Factor
1	Amone P'Olak [16]	CS	74 children aged 8-18 years (72% male)	18-item WEC made for the study, DSM-IV-based 30-item self-rated traumatic reactions questionnaire. Semi-structured interview to contain information on children's perception of the current situation as well as life in captivity.	-	Psychological state in former abducted children
2	Derluyn et al. [9]	CSSR	301 FCS (82% male)	IES-R, semi-structured interviews to obtain demographic information and experiences from abduction.	97%	PTSD in former child soldiers
3	Karunakara et al. [13]	A CS DS	3323 adults (75% female)	Self report questionnaire on trauma events, PDS	21%	Enhanced vulnerability
4	Neuner et al. [12]	CSSR	3179 respondents (75% women)	Checklist of war and non-war related traumatic event types, 19 experienced events + 12 witnessed events. PDS.	23%	Number of traumatic events and its influence on PTSD.
5	Amone-P'Olak [22]	CSSR	123 FA girls aged 12-18 years.	WEC, IES-R, Self-made checklist for negative life events, demographic variables.	99%	Sexually abused adolescent girls
6	Ovuga et al. [31]	CS study. MSCSM	Adjumani: 524 (62% male); Bugiri: 415 with (73% male).	13-item BDI.		Depression
7	Amone-P'Olak et al. [23]	CS	294 FA aged 14-18 (74% male)	CERQ, IES-R, YSR, WEC, subscale of COPE questionnaire.	42% PTS	Cognitive emotion regulation
8	Amone-P'Olak et al. [10]	CSSR design	216 FA boys	IES-R, WEC, IES, self-made checklist for negative life events.	97% significant clinical PTS	Physical abuse on formerly abducted boys
9	Bayer et al. [25]	CSFS rehabilitation settings	169 FCS aged 11-18(83%)	CPTSD-RI, X-factor assessed via structured questionnaires	35%	Openness to reconciliation and feelings of revenge
10	Okello et al. [20]	CS study, unmatched CCD	82 abducted and 71 non-abducted adolescents 11-19 years (63% male)	SDQ, M.I.N.I-KID, trauma event checklist.	13-27%	Depression, anxiety, suicidality – comparing abducted vs. non-abducted
11	Vinck et al. [47]	CS Stratified random MSCS	2585 aged ≥ 18 (50% female)	Socio-economic information, PCL-C, HSCL,	74%	Implications for peace building.
12	Ovuga et al. [11]	CS interview	102 aged 6-18 from rehabcenter in Northern Uganda (57% female)	Demographic information, HTQ, DHSCL, WTEC-15.	56%	PTSD in FCS at rehabilitation center
13	Roberts et al. [39]	CS Adapted random MSCS.	1210 IDPs. ≥18 years (60% female)	HTQ, HSCL-25.	54%	PTSD + Depression (67 %) in displaced persons
14	Pham et al. [41]	CS study	2875 individuals with some living in IDP camps ≥18 year (57% males)	PCL-C, JHD, self-developed list with 33-items to measure exposure to violence and experience of abduction, measure of social relationships		Mental health on FS and IDP's.
15	Klasen et al. [36]	CS FS	330 FCS aged 11-17 years (52% males)	Demographic variables, SES, Child War Trauma Questionnaire, M.I.N.I-KID (PTSD, depression), YSR.	33%	Mental health
16	Klasen et al. [26]	CS FS	330 FCS aged 11-17 years (males 52%)	SES, Child War Trauma Questionnaire, CSTQ, M.I.N.I-KID (PTSD, depression), YSR, questions on: loss of parents, domestic and community violence, hardiness, positive future orientation, peritraumatic dissociation, guilt, revenge, perceived social support, and perceived spiritual support.	33%	Posttraumatic resilience
17	Kinyanda et al. [32]	CS study. MSSP	250 households – 4660 respondents ≥15 years.	HSCL-15, socio-economic/demographic status, EPSIS I.		Depression
18	Klasen et al. [27]	CS FS	330 FCS aged 11-17 years (males 52%)	TRGI, M.I.N.I-KID	33%	Guilt related to PTSD
19	McMullen et al. [24]	CS study	205 adolescents aged 12-19 years (55% males)	WEC, IES-R + APAI	57%	Long-term effect post war.
20	Pleiffer & Elbert [19]	CS interviews	72 FA children (62 FCS) ≥ 17 years (57% male)	Socioeconomic information, trauma checklist, PDS (interview form - PSSI), HSCL-25.	49%	PTSD, depression, anxiety in abducted children
21	Roberts et al. [40]	CS survey, MSCS	1206 respondents ≥ 18 years in IDP camps (60% men).	AUDIT, HTQ, 16-item trauma checklist.		

22	Vindevogel et al. [17]	CS study	1,995 former child soldiers (2003-2006) + shared data from 8,790 former child soldiers (1998-2007)	Socio-demographic information, self-made war-related experiences checklist.		Child soldiers
23	Moscardino et al. [14]	CSMM study	234 aged 14-18 years (52% male)	IES-R, BSI-18, SDQ.	93% (98% FCS & 86% NA)	Comparing former child soldiers and non-abducted children (PTSD)
24	Zwissler et al. [48]	Recognition test	51 civil war victims	PDS, Picture recognition task	51%	PTSD effect on memory
25	Abbo et al. [33]	CS study. MSSP	1680 civilian children and adolescents aged 3-19 years. Psychiatric nurses interviewed children aged 10-19 years, while mothers were interviewed about children below 10 years.	M.I.N.I.-KID, SDQ, socio-demographic variables	7%	Overall mental disorders
26	Amone-P'Olak et al. [18]	WAYS – LCSD	539 youths aged 18-25 years (61% male)	Demographic characteristics made for the study, war trauma screening scale, UNICEF Post-war screening, APAI, ATQ, Social skills rating system, GHQ, CERQ, Myers Achievement motivation scale, Trust (made for the study), The Rosenberg Self-Esteem Scale. PGI, RRS, TMQQ, UNFPA, questions made for psychological/psychiatric care, survey of Youth Reintegration.		Mental health
27	Kinyanda et al. [34]	CS survey	1560 participants ≥ 15	Ecological and socio-demographic section. War-related psychosocial section. Health issues. IPV, HSCL-25, C.A.G.E.		Suicide prevalence (9 %)
28	Okello et al. [29]	Interviews	551 adolescents aged 13-21 (52% males)	Socio-demographic variables, ACE, SWE, YSR, question on sexual risk behavior, IESVR, HSCL-37A	20%	Depression and risk behavior
29	Saile et al. [46]	CS epidemiological survey	235 guardian couples	CAS, VWAES, 31-item checklist served as a measure of adverse childhood experience, PDS, DHSCL, AUDIT		Partner violence in the aftermath of war
30	Vindevogel et al. [44]	Follow-up data CS.	424 FCS (70% males)	Intake status assessment form, follow-up assessment.		Follow-up on long-term psychosocial well-being.
31	Vindevogel et al. [42]	CS stratified RS MM comparison design.	1,008 adolescents (330 FA) aged 12-25 years (54% males)	Free listening task to identify challenges; a free sorting task to categorize the challenges into clusters; and statistical data analysis.		Challenges faced postwar
32	Amone P-O'lak et al. [21]	WAYS* cohort study	539 FA aged 18-25 (61% male)	UNICEF B&H, questions on post-war mental health service, general functioning, demographic characteristics		General functioning among FCS
33	Amone P-O'lak et al. [37]	CS analysis in ongoing longitudinal study.	539 FA aged 18-25 (61% male)	UNICEF B&H, SI, APAI, UNICEF B&H Post-war Screening Survey.		Suicidal ideation
34	Amone-P'Olak et al. [30]	WAYS* LCSD	539 FA aged 18-25 (61% male)	UNICEF B&H, four items addressing psychotic symptoms, UNICEF B&H Post-war Screening Survey.		Psychotic symptoms
35	Amone-P'Olak. [43]	WAYS* LCSD	539 FA aged 18-25 (61% male)	UNICEF B&H, APAI		PWE effect on depression, anxiety and conduct problems
36	Amone-P'Olak et al. [28]	WAYS* LCSD	539 FA aged 18-25(61% male)	UNICEF B&H Post-war Screening Survey, APAI, demographic inventory.		WE influence on depression and anxiety
37	Ertl et al. [35]	A CS population-based survey	1113 Northern Ugandans aged 12-25 (38% males)	Sociodemography, VWAES, PDS, questions in drug consumption, DHSCL, instruments on maladjustment, dysfunction in community, illness and physical health questions, M.I.N.I., LFS, PSQ, Aggression Questionnaire.	25% FCS – 7% NA	The challenge of living on
38	Mandrup & Elklit [15]	CS based survey + CC comparison	408 3 <sup>rd</sup> year senior secondary school students aged 13-24 years (50% female)	Sociodemographic, socioeconomic, 20-item trauma events, HTQ, CSQ, TSC.	38%	PTSD and 20 potentially traumatic events.
39	Okello et al. [38]	CS	551 adolescents aged 13-21	Socio-demographic variables, ACE, SWE, IPPA, IES-R, HSCL-37A		Attachment
40	Saile et al. [45]	TGMI design	368 children, 365 female guardians and 304 male guardians	CTSPC, socio-demographic information, 31-item checklist on family violence, guardians' childhood experience, VWAES, CAS, PDS, DHSCL, AUDIT		Family violence post-war

abduction was found to range from half a day to as long as 16.4 years by Vindevogel et al. [17]. Most abductees seemed to have an average abduction time of a little more than two years (Table 2).

In relation to the duration of abduction, Derluyn et al. did not find the length of the period to have any effect on PTSD. Neither did the age of the child when abducted or the time passed between the abduction and the conducted research [9]. Contrary to these findings,

Amone-P'Olak found that children who had stayed shorter periods in rebel captivity had milder reactions. Amone-P'Olak further found that age did have an influence on the reaction. Children in the age group 13-18 years had a mild or moderate reaction to their experiences while children in the age group 8-13 years had almost no reaction. In his study, Amone-P'Olak categorized the children according to their reactions and found that 15% had almost no reaction, 46% were in the

**Table 2:** General prevalence of mental health problems.

Study (n=)	Gender of participants	Mean age at abduction	Mean duration of abduction	Mean traumatic events	PTSD (%)	Depression (%)	Anxiety (%)
#1 Amone-P'Olak (74) [16]	Mixed	-	-	10.8	-	-	-
#2 Derluyn et al. (301) [9]	Mixed	12.9	2 years	6	97	-	-
#5 Amone-P'Olak et al. (123) [22]	Girls	-	-	23.5	99.19*	-	-
#6 Ovuga et al. (539) [31]	Mixed	-	-	-	-	17.4	-
#7 Amone-P'Olak et al. (294) [23]	Mixed	-	7.8 months	25.05	-	-	-
#8 Amone-P'Olak et al. (216) [10]	Boys	-	-	M = 25.4	97.7*	-	-
#9 Bayer et al. (169) [25]	Mixed	12.1 years	38.3 months	11.1	34.9	-	-
#10 Okello et al. (82) [20]	Mixed	-	-	-	26.8	19.5 NA = 4.2	13.4** NA = 4.2**
#12 Ovuga et al. (102) [11]	Mixed	-	Majority within 2 years	Boys = 12.45 Girls = 10.67	55.9	88.2	-
#14 Pham et al. (2,875) [41]	Mixed	25.8 years	-	-	67	40	-
#15;16 Klasen et al. (330) [26,36]	Mixed	10.8 years	19.8 months	15; 5.34 violent acts	33	36	-
#17 Kinyanda et al. (250) [32]	Mixed	-	-	-	-	29.3	-
#19 McMullen et al. (205) [24]	Mixed	-	21 months	8	57	-	-
#20 Pfeiffer & Elbert (72) [19]	Mixed	-	Boys = 4.9 years Girls = 7.7 years	16.5	49	71	60
#22 Vindevogel et al. (1,995) [17]	Mixed	13.21 years	1.5 years	8.26	-	-	-
#23 Moscardino et al. (234) [14]	Mixed	11.9 years	2 years	5	97.7	-	-
#25 Abbo et al. (1680) [33]	Mixed	-	-	-	-	-	26.6
#26 Amone-P'Olak et al. (539) [18]	Mixed	14.4 years	3.12 years	41.71	-	21.29	-
#28 Okello et al. (551) [29]	Mixed	-	-	-	-	7.22	5.03
#30 Vindevogel et al. (424) [44]	Mixed	12.8 years	381 days	7.99	-	-	-
#31 Vindevogel et al. (1,008) [42]	Mixed	16.7 years	565 days	-	-	-	-
#32-36 Amone-P'Olak et al. (539) [21,28,30,37,43]	Mixed	14.1	3.1 years	-	-	-	-
#37 Ertl et al. (1113) [35]	Mixed	-	-	16.5	25	-	-

**Note:** \*Clinically significant PTS symptoms; \*\*Generalized Anxiety Disorder; NA: Never Abducted-no information provided.

mild reaction range, 35% were in the moderate reaction range while 4% were in the severe range [16].

Only three years after this study, Amone-P'Olak et al. found contradictory results. This study, which was conducted on formerly abducted boys living at three different rehabilitation centres in northern Uganda, found a non-significant effect of duration of stay in captivity on PTS symptomatologi. In contrast, the number of traumatic events did seem to have an effect on the traumatic reactions [10].

### Traumatic events

The extent of traumatic experiences has been a focus in most of the studies conducted on former child soldiers. The traumatic war experiences have been measured on different scales in different studies and traumatic experiences differ on each scale. Table 3 lists some of the most common traumatic events experienced by child soldiers, as they have been highlighted in the articles of the conducted studies.

The average number of traumatic events differed in each study and was measured on different scales. The scale containing the least events was the checklist used by Moscardino et al. containing 10 items [14], while the scale containing the most events, the War Trauma Screening Scale, used by Amone-P'Olak in 2013, contains 52 items [18]. Derluyn et al., who used a 13-item scale, noted that the number of traumatic events seemed to have little effect on the post-trauma reactions [9]. Contrary to this finding, Pfeiffer and Elbert found that the total amount of trauma event types correlated significantly with the PTSD sum-score [19]. This means that the more traumatic events the participants reported, the higher their PTSD score was. These results are similar to the finding among civilians in Uganda in the study by Neuner et al. [12].

In the research on traumatic exposure it is common to distinguish

between direct and indirect exposure. As shown by Okello et al. the most significant traumatic experiences were predominantly direct (e.g. killing or watching someone getting killed compared to learning about someone having been killed) [20].

Most abducted children manage to get away from captivity by their own escape. Vindevogel et al. found that 82% escaped on their own initiative and 18% were released by the LRA or rescued by an opposing armed force [17]. It was further found by Ovuga et al. that 71.9% of their participants escaped within two years of captivity. They also found that children who returned via a reception center reported a higher number of war-related traumatic events (Mean 12.82, SD=1.7) than children who returned straight to their communities (Mean 10.09, SD=3.97); (t=4.63, F=32.37, df=99, p=.000; 95% CI=1.57-3.93) [11]. Amone-P'Olak et al. found that there was no significant difference in functioning between those who passed through rehabilitation centres and those who did not (t=1.32, p=0.18) [21].

### Gender differences

Several studies have found differences between genders and the traumatic events they experience. Ovuga et al. found that boys in general experience more traumatic events (Mean 12.45, SD=2.8) than girls (Mean 10.67, SD=3.7); (F=7.10, t=2.66, df 100, p=.009; 95% CI=.46-3.11) [11]. Likewise, boys were abducted significantly more often than girls, but girls were abducted for a significantly longer period of time [19].

The traumatic experiences also seem to differ between genders. Boys were more likely than girls to have been beaten (OR, 0.47; 95% CI, 0.26-0.86) and having been forced to fight (OR, 0.53; 95% CI, 0.27-0.99), whereas girls were more likely to have been forced into sexual contact compared to boys (OR, 1.80; 95% CI, 1.01-3.18) [14]. Additionally, boys were twice more likely to suffer from physical

Table 3: Prevalence of common traumatic events among FA.

	Percentage (%)	Study
Long distance treks	100; 99.1	Amone-P'Olak et al. [16]; Amone-P'Olak et al. [10]
Death threats and thinking they would be killed	100; 99.5 87.9	Amone-P'Olak [16]; Amone-P'Olak et al. [10]; Klasen et al. [27]
Seeing dead bodies or body parts	90	Amone-P'Olak et al. [16]
Witnessed atrocities against other abductees, civilians or soldiers	88	Vindevogel et al. [17]
Seeing someone being killed	77 86.4	Derluyn et al. [9] Klasen et al. [27]
Perpetrated atrocities of which most were targeting civilians	76	Vindevogel et al. [17]
Hearing about killing of relative or friend	68.8	Okello et al. [20]
Being forced to participate in fights	64 75	Derluyn et al. [9] Amone-P'Olak et al. [23]
Participating in killing someone else	47; 39; 52.9 52.6	Amone-P'Olak et al. [16]; Derluyn et al. [9]; Ovuga et al. [11] Klasen et al. [27]
Forced to drink their own urine	27 16	Derluyn et al. [9] Amone-P'Olak et al. [23]
Seeing a family member being killed	20 4	Amone-P'Olak [16] Amone-P'Olak et al. [23]
Forced to participate in the killing of their own family member	5.6 16.7 6	Amone-P'Olak [16] Amone-P'Olak et al. [10] Amone-P'Olak et al. [23]

injuries than girls [11]. However, 56% of the girls in the study by Vindevogel et al. were assigned at a young age to a rebel as his wife, which included extensive subjection to sexual abuse. On average girls who were assigned as rebel wives stayed in captivity longer [17]. The child soldiers who were military trained, most commonly boys, were likewise abducted for longer periods of time and were seven times more likely to witness atrocities, than child soldiers who were not military trained. The 26% of child soldiers, who were taken to the LRA-bases in Sudan, were also abducted for a significantly longer period of time, than the ones who stayed in Uganda [17].

In another Amone-P'Olak study conducted on formerly abducted and sexually abused girls, 32% of the sample was mothers who had a child in captivity [22]. All but one girl in the sample had clinically significant PTSD symptoms, of which 78% were in the moderate range, and 21% were in the severe range. As seen in Table 4 physical complaints were very common. In the Amone-P'Olak, Garnefski and Kraaij study, 65 of the 78 girls in the sample reported sexual abuse (83.3%) [23].

### Loss of parent(s)

In addition to other traumatic experiences a high prevalence has been found in the loss of parent(s). Ovuga et al. found the highest prevalence of loss with 72.5% having lost their father while 59.8% had lost their mother [11]. Moscardino et al. showed that former abducted more frequently reported loss of their mother ( $p < 0.001$ ) or father ( $p < 0.001$ ) than their non-abducted peers [14]. An additional finding made by Derluyn et al., showed that the death of a mother led to higher avoidance scores in girls (measured on the IES-R scale), which can indicate that parents, especially the mother for girls, can be a protective factor against stress reactions [9].

### Mental health

The most commonly studied mental health disorder of former child soldier is PTSD. As indicated in Table 1 the prevalence of PTSD among former child soldiers appears to be quite high.

Okello et al. showed that the only events, which were significantly associated with a diagnosis of PTSD, were deprivation of food and water and being forced to perform rituals (the type of rituals have not been specified by the authors) [20]. However, the study by McMullen, O'Callaghan, Richards, Eakin, and Rafferty 24 found the most strongly correlated types of traumatic events with post-traumatic stress symptoms (PTSS) to be 'Ambush' ( $r = 0.53, p < 0.001$ ), 'Threats to kill' ( $r = 0.45, p < 0.001$ ) and 'Friend or family member killed' ( $r = 0.44, p < 0.001$ ). Adolescents who had been abducted had significantly higher levels of PTSS ( $t = 0.44, p < 0.001$ ) [24].

**Table 4:** Prevalence of common physical complaints [23].

Physical complaints	Percentage (%)
Pelvic Pain	74.80
Abdominal Pains	72.36
Vaginal Candidiasis	67.48
Gonorrhoea	60.16
Genital Warts	54.47
Abnormal Vaginal Discharge	52.85
Syphilis	52.03
Bacterial Vaginosis	41.46
Pelvic Inflammatory Disease	34.96
Amenorrhoea	34.15
Genital Herpes	28.83

By assessing the general mental health of former child soldiers, Okello et al. [20] found that 51.2% of the abductees showed clinically significant levels of distress and 70.7% met criteria for one or more psychiatric disorders based on the M.I.N.I.-KID. PTSD and major depression were the most common co-morbid disorders and were found in 8.5% of abductees, while major depression, PTSD, and generalized anxiety disorder co-occurring together was only found in 3.7% of former abducted [20].

In the study by Ovuga et al. they found that children who were 16 years or older had higher HSCL (Hopkins Symptoms Check-List) scores than the younger children. Children who experienced 10 or more war-related traumatic events also scored higher on the HSCL-14 than children who experienced 9 or fewer [11]. Surprisingly, Pfeiffer and Elbert further found that PTSD correlated negatively with abduction time spent in the bush meaning that the longer the participants had been abducted, the fewer PTSD symptoms they reported [19].

In addition to their findings on PTSD, Moscardino et al. measured psychological distress and emotional and behavioral difficulties. More former child soldiers scored above the cut-off scores for all mental health outcomes in comparison with non-abducted children. For psychological distress 93.2% of former child soldiers scored above, compared with 80.2% of never abducted children, while 67.7% of former child soldiers scored above the cut-off for behavioural and emotional problems compared with 33.7% for never abducted. Again, girls reported significantly more psychological difficulties than boys. Total psychological distress was associated with being seriously beaten, getting injured, witnessing someone being killed, killing someone personally, having to drink urine, having to punish other children, and being forced to engage in sexual contact [14]. Moscardino et al., found more significant correlations between single traumatic exposures and mental health problems in never-abducted children, compared to child soldiers [14].

Amone-P'Olak et al. conducted a comprehensive study, the War-Affected Youth Study (WAYS), on former abducted child soldiers in 2013/18. They found that war experiences were significantly associated with difficulties performing daily activities and tasks, more so in females than in male participants ( $t = -2.62, p < 0.001$ ). Women were more at risk of poor long-term mental health outcomes than men. Males scored higher on alcohol and drug use ( $t = -5.33, p < 0.05$ ), but females scored significantly higher on depression/anxiety ( $t = -6.03, p < 0.05$ ), somatic complaints ( $t = -5.20, p < 0.05$ ) and difficulties with daily tasks ( $t = -2.62, p < 0.05$ ). Only 17% of the participants reported having seen a mental health worker despite close to 70% acknowledging that they experienced emotional and behavioural problems and 73% expressing interest in receiving help [18]. The majority of participants reporting poor functioning identified stigma/discrimination, fear of family break-up, and lack of health workers as the major barriers to seeking help [21]. Significantly more female than male former child soldiers sought help from mental health services [21].

### Revenge, reconciliation and emotional regulation

Bayer, Klasen, and Adam studied feelings of revenge and reconciliation in former abducted child soldiers [25]. They found that the more PTSD symptoms children had, the less willing they were to reconcile with their perpetrators and the more they demonstrated feelings of revenge. The children for whom more time had passed since their return, showed more openness towards reconciliation, but no difference concerning feelings of revenge from recently released

children. Additionally, they found that children who were threatened with death or serious harm had significantly lower openness to reconciliation; however, there was no difference in PTSD symptoms [25].

Klasen et al. looked at resilience [26]. Posttraumatic resilience was associated with lower exposure to domestic violence, less guilt cognitions, less motivation to seek revenge, better socioeconomic situation in the family, and more perceived spiritual support. Klasen, Schrage, Post, and Adam further found that increased guilt cognition was significantly related to PTSD [27].

### Comorbidity

As mentioned above, PTSD comes with many comorbid disorders. In addition to PTSD, trauma can be a leading cause of anxiety and depression. Different studies have found the prevalence of anxiety and depression to be between 4.2% and 71% for anxiety and 4.2% and 88.2% for depression, as shown in Table 2. Okello et al. compared former abducted children with never abducted children and found higher rates of specific psychiatric disorders among the former abductees [20]. The most common comorbid disorders were PTSD and major depression. They further found that 3.5% of the former abducted children had major depression, PTSD, and generalized anxiety disorder co-occurring together compared to none of the never abducted. There was no significant association between experienced trauma events and any diagnosis in the abducted children group [20].

In the study by Pfeiffer and Elbert, which was also conducted on former abductees, prevalence as high as 36% of the children were found to fulfill the criteria for PTSD, depression, and anxiety simultaneously [19]. Like Okello et al., Pfeiffer and Elbert did not find any correlation between trauma events and depression [19,20].

Contrary to the above-mentioned findings, one study did find different trauma events to have different impacts on mental health. Amone-P'Olak found that especially "witnessing violence", "deaths", "threat to loved ones", and "sexual abuse" were the most noxious predictors of symptoms of depression/anxiety in war-affected youths [18]. Depression/anxiety was also associated with "direct personal harm" and "total number of war events [28]. Of these "sexual abuse" was a unique predictor of depression/anxiety for female, while "threat to loved ones" uniquely predicted symptoms of depression/anxiety in male but not in female youth. Furthermore, war experiences were found to be linked to depression/anxiety through post-war hardship in 44% of the respondents [18].

Another study, which has examined gender differences, is Okello et al. [29]. They found that females had higher mean total scores of anxiety, depression, and post-traumatic stress symptoms. Females were also more likely to have high sexual risk, high levels of aggression, and increased suicidal behavior, while males were more likely to exhibit rule breaking behavior. Okello et al. also found that depression symptoms and adverse childhood events were associated with risk behavior. A significant relationship was found between stressful war events and depression symptoms [29].

The WAYS study furthermore found that psychotic symptoms correlated significantly positive with war experiences as well as post-war hardship [30]. According to a univariable regression model, 'witnessing violence', 'direct personal harm', 'threat to self', 'deaths', 'threat to loved ones', 'involvement in hostilities', 'sexual abuse', and 'general number of war experiences' significantly predicted psychotic

symptoms. An estimated 50% of the effect of war experiences on psychotic symptoms is mediated through post-war hardship [30].

### Depression

Looking exclusively at depression, Ovuga, Boardman, and Wasserman compared the two districts of Adjumani and Bugiri [31]. Adjumani has previously been influenced by war while Bugiri was not. Respondents from the Adjumani district were twice as likely as those from Bugiri to score in the moderately to severely depressed mood range and more than seven times as likely as those from the Bugiri district to score in the probably clinically significant depressed mood range. Again, females were more than twice as likely as men to score high (moderate to severe range) on depression than males [31].

More than half of the respondents in the two districts attained a score of 10 or higher. At a cut-off point of 20 or higher the proportion of individuals who might qualify for a probable diagnosis of depression was 17.4%. High BDI (Beck Depression Inventory) scores were associated with being female and coming from the Adjumani district [31], and similar gender differences were found by Kinyanda et al. [32]. In their study on depression, female gender was independently associated with increased risk of major depression disorder. A prevalence of 34.7% was found among females compared to 24.2% among males. In both males and females exposure to war trauma (e.g. experiencing war related torture such as being beaten, raped, gunshot injuries, military detention and staying in the bush) was related to major depression disorder, among other events [32].

### Anxiety

Only one study was found to look exclusively into anxiety. Abbo et al. studied households with children aged 3-19 years and found that the most common anxiety disorder in both males and females was specific phobia (15.8%) followed by PTSD (6.6%), and separation anxiety disorder (5.8%) [33]. For children above the age of ten a psychiatric nurse interviewed the children, while the mothers were interviewed about children below the age of ten. The prevalence of any disorder was higher among females than males. The children were separated into different age groups and the study found that younger children, below 5 years of age, were more likely to have separation anxiety disorder (7.7%) and specific phobias (20.3%), while those aged 14-19 were significantly more likely to have PTSD (12.8%). Anxiety disorders were more prevalent among respondents with other psychiatric disorders. For the 4.1% of subjects who had two or more comorbid disorders the prevalence of anxiety disorders was 62.1%. Prevalence of anxiety was higher among those where both parents were dead, those with a history of serious mental illness, those with emotional and behavioral problems, and those with abnormal or borderline scores on the emotional symptoms scale. Factors found to be significantly associated with anxiety were: Experience of trauma, score on the emotional symptom scale, and presence of DSM disorders. Significant associations with anxiety disorders were found for female gender, guardian unemployment, living with father only, living in permanent housing, and having parents without education [33]. The authors of the study expressed surprise concerning the finding of permanent housing being associated with anxiety disorders, and ascribe this to future research [33].

### Suicide

Kinyanda et al. addressed another issue of mental health by conducting a study in the Ugandan districts of Amuria and



Katakwi concerning suicide [34]. Participants were characterized as either “vulnerable” or “non-vulnerable” according to their life circumstances. The study found a lifetime rate of attempted suicide to be 9.2% and a 12-months prevalence of attempted suicide to be 2.6%. The lifetime prevalence was higher for females (11.0%) compared to males (6.4%) [34].

The main war-related psychosocial factor associated with the lifetime rates of attempted suicide among males, was sexual torture. For women the associated factors were intimate partner violence and sexual torture. The univariate associations between the lifetime rate of attempted suicide and the psychiatric and medical problems for males were alcohol abuse problems and having surgical complaints. For females they were alcohol abuse problems, major depressive disorder, and having reproductive health complaints [34].

Among males, the factors independently associated with lifetime rate of attempted suicide were: Belonging to a vulnerability category, having a surgical complaint, and having major depressive disorder. For females this was: The factor of subcounty, intimate partner violence, having a reproductive health complaint, and major depressive disorder [34].

Additionally, Ertl et al. have studied suicidal ideation among former abducted children compared to never abducted children and found former abducted to have suicidal ideation rates at 34% compared to never abducted with rates of 19% [35]. Ertl et al. also found males and former child soldiers to report significantly higher alcohol consumption and they sniffed petrol and glue more often than females and non-abducted individuals [35]. In the study on former abducted children by Klasen et al., 30% of the children reported suicidal ideation during the past month before the study [36].

The WAYS study further found that 129 participants (23.9%) reported suicidal ideation sometimes (71, 13.2%), many times (39, 7.2%), or all the time (19, 3.5%) [37]. War experiences significantly correlated positively with current suicidal ideation, symptoms of depression/anxiety, and post-war hardship. Current suicidal ideation significantly correlated with symptoms of depression/anxiety, post-war hardship, and previous war experiences. ‘Witnessing violence’, ‘direct personal harm’, ‘deaths’, ‘involvement in hostilities’, ‘sexual abuse’, and ‘war experience total exposure’ significantly predicted suicidal ideation and males and females differed significantly with females having a higher tendency towards suicidal ideation { $(537)=-3.07, p<0.001$ } [37].

### Protective factors

Okello et al. studied attachment and its relation to mental health [38]. They found that parental and maternal attachment was protective against depression and anxiety symptoms, but not post-traumatic stress symptoms. Males reported stronger parental attachment than females. Furthermore, males had more trust in their mothers and more communication with their fathers, while females were more alienated from their parents [38]. Alienation from fathers was independently associated with an increase in depression, anxiety, and PTSS, while alienation from mothers were only independently associated with depression and anxiety. Especially alienation from parents was associated with increase in all three factors, while alienation from peers was associated with none of these. Trustful peer relationship was protective against depression, unlike communication with peers, which was associated with posttraumatic stress symptoms. When there were high levels of stressful war events an increasing level of

peer attachment was associated with decreasing post-traumatic stress symptom scores ( $b=-0.17, 95\% \text{ CI}=-0.48-0.14, p=-0.28$ ), but when there were low levels of stressful war events an increasing level of peer attachment was associated with increasing post-traumatic stress symptom scores ( $b=0.32, 95\% \text{ CI}=0.01-0.64, p=0.043$ ) [38].

Okello et al. studied risk behaviour among adolescents in 2013 [29]. In the study they found that females were more likely to have high sexual risk, high levels of aggression, and suicidal behaviour. Males on the other hand were more likely to have high levels of rule breaking behaviour. Furthermore, multiple risk behaviours were significantly more common among females than males. Depression symptoms and adverse childhood events were independently associated with exhibiting multiple risk behaviours (Odds ratio [OR]=1.10, 95% CI=1.04-1.12,  $p<0.001$ ; and OR=1.25, 95% CI=1.06-1.48,  $p=0.02$ , respectively), while living with siblings or both parents were protective against multiple risk behaviours (OR=0.16, 95% CI=0.04-0.7,  $p=0.02$ ; AOR=0.40, 95% CI=0.10-1.50,  $p=0.17$ , respectively) [29].

### IDP/Returning home

**IDP:** In addition to the psychological consequences of trauma and abduction, several studies have looked into the returning and reintegration into the local community as well as living in IDP camps (refugee camps for internally displaced persons). A study by Roberts, Ocaka, Browne, Oyok, and Sondorp looked into the IDP camp living conditions [39]. The study was carried out in the Gulu and Amuru district of northern Uganda, which at the time contained an estimated 650,000 IDPs (40% of all IDPs in Uganda). Of the participants, 68% had been displaced for more than five years and 41% had been displaced in two or more camps. Fifty-eight percent of the participants had experienced 8 or more of the 16 traumatic events that were covered and more than half of these events had occurred whilst the participants were living in the camp. The traumatic events, which were highlighted by Roberts et al. can be seen in Table 5 [39]. A total of 93% of the participants did not feel safe in the camp they lived in and the main reasons for this were lack of food (62%), fear of disease outbreak (61%), and insecurity and fear of armed forces (54%). Differences in traumatic events and PTSD, as well as depression symptoms between genders can be seen in Table 6.

The individual trauma exposures with the strongest associations with PTSD were ill health without medical care, rape or sexual abuse, and lack of food and water. The individual trauma exposures with the strongest associations with depression were ill health without medical care, lack of food or water, and unnatural death of family/friend. Higher frequency of exposure to traumatic events (experienced 12 or more of the 16 trauma events included in the questionnaire) was associated with exhibiting more symptoms of PTSD and depression [39].

**Table 5:** Prevalence of traumatic events experienced among IDPs [39].

Traumatic events experienced	Percentage (%)
Lack of food and water	90
Witnessed or experienced the murder of a family or friend.	75
Lacking housing or shelter	77
Ill without medical care	65
Witnessed the murder of a stranger or strangers.	64
Having been beaten or tortured.	56
Having been kidnapped.	40
Sexually abused.	14

**Table 6:** Trauma prevalence between gender and the effect on PTSD and Depression [39].

Trauma	Women %	Men %
Being beaten or tortured	47	70
Raped or sexually abused	18	8
Abducted	31	62
Imprisoned	13	41
Involved in combat	23	34
<b>PTSD symptoms</b>	<b>60.1</b>	<b>45.6</b>
<b>Depression symptoms</b>	<b>78</b>	<b>51.4</b>

The study by Pfeiffer and Elbert [19] also looked at IDP camps and found that the location of living at the time of the interview (Reception Centres, IDP Camp) can help explain the PTSD symptom sum-score as a dependent variable. Male respondents living in an IDP-Camp with a kinship murdered in the war and a high number of experienced traumatic events were more likely to develop PTSD symptoms than others [19].

In 2011, Roberts, Ocaka, Browne, Oyok and Sondorp looked at substance abuse in relation to IDP camps [40]. Among the internally displaced persons 32.4% of men and 7.1% of women were categorized as having an alcohol disorder. Men were seven times more likely than women to be above the threshold level for an alcohol disorder with 9.5% of men drinking three or more times a week compared to 1.4% for women [40].

Respondents who experienced  $\geq 12$  traumatic events were twice as likely to have scores indicative of alcohol disorders as those who had experienced  $\leq 3$  events. However, PTSD and depression showed no association with alcohol disorders [40].

**Returning home:** Two studies have looked at consequences of ‘returning home’ after abduction. In the study of Pham et al. [41], 39% of the participants reported having problems upon returning to their home communities. Of the former abducted participants, 13% responded that they had spent time in a reception centre at their return. Of those who had been abducted for six months or more, 49% had spent time in a reception center and half of these received follow-up visits from the reception center staff. Of those spending time in a reception center, 88% reported that staying there had helped them return to their communities [41].

According to the findings by Pham et al. [41], those who stayed longer in captivity had more problems when they returned. Mental and social problems were most commonly reported, while some also reported physical and material concerns. Problems when returning to their community were associated with meeting criteria for symptoms of depression, while positive self-reported scores for the relationship with their family, friends, and community were associated with a decrease in odds of meeting the criteria for symptoms of depression [41].

Vindelvogel et al. [42], found that significantly more former abducted participants reported emotional challenges, while fewer reported relational and social challenges compared to never abducted participants. The significantly higher prevalence of emotional challenges was mainly accounted for by the higher reporting of mourning the death of a parent, abduction by the LRA, or recalling past events [42].

Psychopathology was found by Ertl et al., to be the strongest predictor of maladjustment in both sexes when controlling for the

effects of abduction and trauma exposure [35]. However, independent trauma exposure was found to be a significant contributor to maladjustment, even when controlling for psychopathology and abduction. Controlling for both mediators (i.e. traumatic exposure and psychopathology) the positive influence of abduction on maladjustment disappeared completely. For both genders, the relationship between abduction and maladjustment was fully influenced by traumatic exposure and psychopathology brought on by traumatic exposure [35].

The post-war environment also seems to have an effect on people. Amone-P’Olak et al. [18,43], found that post-war environmental stressors play an important role in explaining the association between war experiences and ill mental health. The total mediating effects by postwar environment stressors were just under 44% for depression/anxiety and almost complete (89%) for conduct problems. This indicates that the impact of war experiences can maintain long-term mental health problems in former child soldiers with depression/anxiety in relation to conduct problems, but only through postwar environment [18,43].

In the study by Vindevogel et al. [44] conducted on former child soldiers two years after their return, they found that nearly half of the participants reported insults by other people, most frequently as ‘child/wife of Kony’, ‘rebel’, or ‘killer’. Among participants, who did not receive professional support, the estimated proportion of nightmares was significantly higher when insulted than when not insulted. Those who do not attend school were twice as likely to have nightmares. The odds of withdrawnness tripled for participants who were insulted compared to participants who were not being insulted [44].

### Additional consequences of war and child soldiering

War trauma also seems to influence child abuse. A study by Saile et al. [45] found that PTSD symptoms in male guardians predicted increased level of experienced maltreatment in their children, as reported by the children themselves. Likewise, childhood family violence was for males the strongest independent predictor of more self-reported perpetration against their own children. For males, PTSD symptom severity and the level of alcohol related problems indicated more perpetrations against their own children. With regard to the prevalence of individual risk factors of child maltreatment, Saile et al. found high levels of previous exposure to violence in both male and female guardians across all domains to be associated with maltreatment against their own children (e.g. childhood family violence, war-related exposure, and partner violence) [45].

Similar findings were discovered for partner violence. Saile et al. [46] found a high correlation between women’s previous exposure to war-related events and more severe victimization in their intimate relationships. For men, there was no correlation. The only significant risk factor for males that correlated with women’s experience of partner violence was men’s self-reported level of alcohol-related problems. Table 7 shows the findings by Saile et al. [46] from their

**Table 7:** Prevalence of partner violence against women [36].

Violence against women	Percentage (%)
At least one type of abusive behavior	86
Currently afraid of partner	43
At least one act of verbal/psychological abuse	80
Physical abuse	71
Isolation	52
Rape and attempted rape in the last year	23
One incident of physical or sexual abuse	72

study on partner violence conducted on 235 couples (all married or cohabiting couples). Different subtypes of partner violence have also been found in regards to war-related risk factors, as can be seen in Table 8 [46].

Focusing on peace building in northern Uganda, Vinck et al. [47] showed that 74.3% of the sample met PTSD criteria and 44.5% met depression symptom criteria. The study found that respondents who met the PTSD criteria were more likely to identify violent means as a way to achieve peace. Likewise, people with depression were less likely to identify nonviolent means as a way to achieve peace [47].

Zwissler et al. [48], applied an item method called directed forgetting and found that directed forgetting is reduced in people with PTSD and that the reduction is related to stimulus arousal. Their study showed that traumatized people with PTSD, but not without, are impaired in their ability to selectively control episodic memory encoding [48].

## Discussion

As is evident from these comprehensive studies in northern Uganda, the psychological consequences of the conflict have been severe and widespread. The psychological impact is found in many different domains from mental health problems like PTSD, depression, anxiety, and psychosis to suicidal ideation, alcohol abuse, partner violence, child abuse, and feelings of guilt and revenge etc. When viewing the traumatic events experienced by the former abducted child soldiers, the traumatization and mental health problems are not surprising. Civilians who were never abducted were furthermore found to have a high prevalence of mental health problems as well, which Moscardino et al. argues may be explained by the disruptive effect of political violence in the child's environment [14]. This may be because many experienced the loss of friends and family members despite not being directly involved with the LRA. This is in compliance with the results by Mandrup and Elklit [15], who found high levels of traumatic events among civilians even outside of northern Uganda. Many of the never abducted civilians knew other people who were abducted or simply lived with a fear of being abducted themselves or experienced atrocities in the community committed by the rebels. Furthermore, a majority of the people who were not abducted lived in the IDP camps, where the lack of food and the fear of a disease outbreak, as well as the insecurity and fear of armed forces, likewise could be traumatizing [39]. Furthermore, the study by Saile et al. [45] on child abuse seems to indicate trauma transmission, where traumatic experiences by guardians results in perpetration against their children. This could indicate a pattern of child maltreatment, likely to continue in the future.

As mentioned above, the average number of traumatic events differed in each study. The different scales used to measure the events are likely to explain this. Derluyn et al. used a scale containing only

13-items and noted that the number of traumatic events seemed to have little effect on the post-traumatic reactions [9]. Derluyn et al. ascribed this to the fact that the circumstances, which these children had to survive under, were traumatizing in themselves and that single events therefore had less influence on the trauma reactions, which could indicate that the 'traumatizing circumstances' that Derluyn et al. [9] refer to, might be captured on a trauma event scale that contains more items. It can further be argued that a more detailed insight into the traumatic events can make it easier to clarify any possible correlation between traumatic events and traumatic reactions. Future research may benefit from examining this.

Contradictory results were also found on the effect that the amount of time spent in captivity had on PTSD. Derluyn et al. did not find the amount of time spent in captivity to have any effect on PTSD [9], while Amone-P'Olak [16] found that children who had stayed shorter periods in rebel captivity had milder reactions. That longer time in captivity would lead to a higher prevalence of PTSD sounds reasonable, however, it can also be speculated that abduction in itself is traumatizing enough to result in PTSD. More research is therefore needed to support either claim.

As found by Pham et al. and Vindevogel et al. [41,42] many former abducted children reported problems at their return to their communities. Mental health and social problems were most commonly reported in the study by Pham et al. [41], while it was emotional problems that were reported in the study by Vindevogel et al. [42]. The study by Ertl et al. found the strongest predictor of maladjustment to be psychopathology [35] and in addition to these findings, Amone-P'Olak et al. [18,43] further found that postwar environmental stressors played an important role in explaining the association between war experiences and ill mental health, especially for conduct problems. Examples of problems when returning home has been given by Vindevogel et al., who found those two years after returning from captivity, nearly half of the participants reported harassment by other people [44]. The alienation that can result from such discrimination was found to be associated with an increase in depression and anxiety symptoms by Kinyanda et al. [34], especially alienation from parents, while attachment to parents and peers appears to be a protective factor of depression and anxiety symptoms [34]. Okello et al. reported stronger parental attachment for males than females and that males had more trust in their mothers and more communication with their fathers, while females were more alienated from their parents [38]. With the above mentioned knowledge that females tend to experience more discrimination at return than males [5], these combined results can help explain why females tend to experience more mental health problems than males [14,18,19]. Future research can benefit from this speculation to clarify if the association between attachment/alienation/discrimination and mental health problems is significant different between males and

**Table 8:** Risk factors correlating with different subtypes of partner violence against women [46].

Risk factors	Partner violence
<b>Women</b>	
Previous war-related exposure	All types of partner violence except sexual abuse
Long-term abduction	Isolation and sexual violence
Maltreatment experienced in childhood	Psychological abuse and sexual abuse
Re-experiencing symptom severity	Physical partner violence and isolation
<b>Men</b>	
Alcohol related problems	Psychological and physical partner violence

females. It is a universal finding that females more often meet the criteria for PTSD than males [49], therefore, future research could benefit from studying whether the association between PTSD and attachment/alienation/discrimination is equally universal.

Despite the many psychological consequences that the conflict has had on the former abducted children, Pham et al. found that only 13% reported that they had spent time in a reception center at their return [41]. Of those who had been abducted for more than six months, 49% had spent time in a reception centre. Comparing this finding to the finding made by Derluyn et al. that abduction time had no effect on the PTSD prevalence, many former abducted with equally high levels of PTSD, have returned to their community without receiving any help [9]. Likewise, the findings by Amone-P'Olak et al. that only 17% of their participants reported having seen a mental health worker, despite around 70% acknowledging that they experienced emotional and behavioral problems, and 73% expressing interest in receiving help, is a great concern [18]. As mentioned initially, Uganda lacks psychiatric health workers from whom people can seek treatment [6]. This is supported by Amone-P'Olak et al. [18], who noted 'lack of health workers' as one of the major barriers to seeking help. That mental health care is limited in northern Uganda combined with the problems identified in regards to returning home, can help explain why the prevalence of mental health problems is still so high, despite the conflict ending in 2007.

### Further thoughts

There are an estimated 250,000 child soldiers still in the world today. Most of them are situated in African countries like Central African Republic, Chad, Democratic Republic of Congo, Somalia, and Sudan [3]. Therefore, the atrocities committed against these children and thereby the traumatizing consequences of those, did not end together with the conflict in northern Uganda.

All of the above mentioned countries are low-income countries like Uganda, and the mental health care they can provide is similar [8]. It can therefore be expected that the consequences of the conflicts in these countries will resemble those in northern Uganda. People with an episode of PTSD that lasts longer than one year are said to suffer from 'chronic PTSD'. The prognosis is generally poor for people who continue to meet PTSD criteria for more than 1 or 2 years post event [49]. With so many conflicts around the world, taking place in low-resource countries that lack mental health care, the outcome for the exposed populations can therefore be expected to be quite poor. This is evident from the research in northern Uganda where people continue to suffer from mental health problems to this day.

It takes more than financial resources to rebuild a country in a post-war environment. As shown by Bayer et al. [25] the more PTSD symptoms that former abducted child soldiers had, the less willing they were to reconcile with their perpetrators and the more feelings of revenge they demonstrated. Likewise, children who were threatened with death or serious harm had significantly lower openness towards reconciliation and significant more feelings of revenge. Reaching peace settlement is equally influenced by mental health as shown by Vinck et al. [47] who found that respondents, who met the PTSD criteria and people with depression, were more likely to identify violent means as a way to achieve peace. The psychological impact that such conflicts have on the population is therefore likely to be continuing, while simultaneously limiting further positive development.

### References

1. The United Nations (2015) Office of the Special Representative of the Secretary-General for Children and Armed Conflict. Child Recruitment.
2. The United Nations (2007) Paris Principles on the Involvement of Children in Armed Conflict.
3. War Child (2014) Child soldiers.
4. Blattman C, Annan J (2008) Child combatants in northern Uganda: Reintegration myths and realities. In: Muggah R (Ed.), *Security and Post-Conflict Reconstruction: Dealing with Fighters in the Aftermath of War*. Routledge.
5. Child Soldiers Global Report (2008).
6. World Health Organization (2006) WHO-AIMS Report On Mental Health System in Uganda. World Health Organization and Ministry of Health Republic of Uganda.
7. World Health Organization (2013) World Health Statistics.
8. World Health Organization (2011) Mental Health Atlas.
9. Derluyn I, Broekaert E, Schuyten G, De Temmerman E (2004) Post-traumatic stress in former Ugandan child soldiers. *Lancet* 363: 861-863.
10. Amone-P'Olak K, Garnefski N, Kraaij V (2007) The impact of war experiences and physical abuse on formerly abducted boys in northern Uganda. *South African Psychiatry Review* 10: 76-82.
11. Ovuga E, Oyok TO, Moro EB (2008) Post traumatic stress disorder among former child soldiers attending a rehabilitative service and primary school education in northern Uganda. *African Health Science* 8: 136-141.
12. Neuner F, Schauer M, Karunakara U, Klaschik C, Robert C, et al. (2004) Psychological trauma and evidence for enhanced vulnerability for posttraumatic stress disorder through previous trauma among West Nile refugees. *BMC Psychiatry* 4: 34.
13. Karunakara UK, Neuner F, Schauer M, Singh K, Hill K, et al. (2004) Traumatic events and symptoms of post-traumatic stress disorder amongst Sudanese nationals, refugees and Ugandans in the West Nile. *African Health Science* 4: 83-93.
14. Moscardino U, Scrimin S, Cadei F, Altoè G (2012) Mental Health among Former Child Soldiers and Never-Abducted Children in Northern Uganda. *The Scientific World Journal* 367545.
15. Mandrup L, Elklit A (2014) Victimization and PTSD in Ugandan Youth. *Open Journal of Epidemiology* 4: 141-156.
16. Amone-P'Olak K (2004) A study of the psychological state of former abducted children at Gulu World Vision Trauma Centre. *Torture* 14: 24-34.
17. Vindevoogel S, Coppens K, Derluyn I, Schryver MD, Loots G, et al. (2011) Forced conscription of children during armed conflict: Experience of former child soldiers in northern Uganda. *Child Abuse & Neglect* 35: 551-562.
18. Amone-P'Olak K, Jones PB, Abbott R, Meiser-Stedman R, Ovuga E, et al. (2013) Cohort profile: mental health following extreme trauma in a northern Ugandan cohort of War-Affected Youth Study (The WAYS Study). *SpringerPlus* 2: 300.
19. Pfeiffer A, Elbert T (2011) PTSD, depression and anxiety among former abductees in northern Uganda. *Conflict and Health* 5: 14.
20. Okello J, Onen TS, Mussi S (2007) Psychiatric disorders among war-abducted and non-abducted adolescents in Gulu district, Uganda: a comparative study. *African Journal of Psychiatry* 10: 225-231.
21. Amone-P'Olak K, Jones P, Meiser-Stedman R, Abbott R, Ayella-Ataro PS, et al. (2014) War experiences, general functioning and barriers to care among former child soldiers in Northern Uganda: the WAYS study. *J Public Health (Oxf)* 36: 568-576.
22. Amone-P'Olak K (2005) Psychological impact of war and sexual abuse on adolescent girls in northern Uganda. *Intervention* 3: 33-45.
23. Amone-P'Olak K, Garnefski N, Kraaij V (2007) Adolescents caught between fires: Cognitive emotion regulation in response to war experiences in northern Uganda. *Journal of Adolescence* 30: 655-669.
24. McMullen JD, O'Callaghan PS, Richards JA, Eakin JG, Rafferty H (2011)

- Screening for traumatic exposure and psychological distress among war-affected adolescents in post-conflict northern Uganda. *Soc Psychiatry Psychiatr Epidemiol* 47: 1489-1498.
25. Bayer CP, Klases F, Adam H (2007) Association of Trauma and PTSD Symptoms with Openness to Reconciliation and Feelings of Revenge among Former Ugandan and Congolese Child Soldiers. *JAMA* 298: 555-559.
26. Klases F, Daniels J, Adam H, Oettingen G, Post M, et al. (2010) Posttraumatic Resilience in Former Ugandan Child Soldiers. *Child Development* 81: 1096-1113.
27. Klases F, Schrage J, Post M, Adam H (2011) Guiltless guilty-trauma-related guilt and posttraumatic stress disorder in former Ugandan child soldiers. *Praxis der Kinderpsychologie und Kinderpsychiatrie* 60: 125-142.
28. Amone-P'Olak K, Ovuga E, Croudace TJ, Jones PB, Abbott R (2014) The influence of different types of war experiences on depression and anxiety in a Ugandan cohort of war-affected youth: the WAYS study. *Social Psychiatry and Psychiatric Epidemiology* 49: 1783-1792.
29. Okello J, Nakimuli-Mpungu E, Musisi S, Broekaert E, Derluyn I (2013) War-related trauma exposure and multiple risk behaviors among school-going adolescents in northern Uganda: The mediating role of depression symptoms. *Journal of Affective Disorders* 151: 715-721.
30. Amone-P'Olak K, Otim BN, Opio G, Ovuga E, Meiser-Stedman R (2014) War experiences and psychotic symptoms among former child soldiers in northern Uganda: the mediating role of post-war hardships-the WAYS Study. *Social Psychiatry Psychiatric Epidemiology* 49: 1783-1792.
31. Ovuga E, Boardman J, Wasserman D (2005) The prevalence of depression in two districts of Uganda. *Social Psychiatry and Psychiatric Epidemiology* 40: 439-445.
32. Kinyanda E, Woodburn P, Tugumisirize J, Kagugube J, Ndyabangi S, et al. (2011) Poverty, life events and the risk for depression in Uganda. *Social Psychiatry Psychiatric Epidemiology* 46: 35-44.
33. Abbo C, Kinyanda E, Kizza RB, Levin J, Ndyabangi S, et al. (2013) Prevalence, comorbidity and predictors of anxiety disorders in children and adolescents in rural north-eastern Uganda. *Child and Adolescent Psychiatry and Mental Health* 7: 21.
34. Kinyanda E, Weiss HA, Mungherera M, Onyango-Mangen P, Ngabirano E, et al. (2013) Prevalence and risk factors of attempted suicide in adult war-affected population of eastern Uganda. *Crisis* 34: 314-323.
35. Ertl V, Pfeiffer A, Schauer-Kaiser E, Elbert T, Neuner F (2014) The Challenges of Living On: Psychopathology and Its Mediating Influence on the Readjustment of Former Child Soldiers. *PLoS One* 9: e102786.
36. Klases F, Oettingen G, Daniels J, Adam H (2010) Multiple Trauma and Mental Health in Former Ugandan Child Soldiers. *Journal of Traumatic Stress* 23: 573-581.
37. Amone-P'Olak K, Lekhulile TM, Meiser-Stedman R, Ovuga E (2014) Mediators of the relation between war experiences and suicidal ideation among former child soldiers in Northern Uganda: the WAYS study. *BMC Psychiatry* 14: 271.
38. Okello J, Nakimuli-Mpungu E, Musisi S, Broekaert E, Derluyn I (2014) The Association between Attachment and Mental Health Symptoms among School-Going Adolescents in Northern Uganda: The Moderating Role of War-Related Trauma. *PLoS One* 9: e88494.
39. Roberts B, Ocaka KF, Browne J, Oyok T, Sondorp E (2008) Factors associated with post-traumatic stress disorder and depression amongst internally displaced persons in northern Uganda. *BMC Psychiatry* 8: 38.
40. Roberts B, Ocaka KF, Browne J, Oyok T, Sondorp E (2011) Alcohol disorder amongst forcibly displaced persons in northern Uganda. *Addictive Behaviors* 36: 870-873.
41. Pham P, Vinck P, Stover E (2009) Returning home: forced conscription, reintegration, and mental health status of former abductees of the Lord's Resistance Army in northern Uganda. *BMC Psychiatry* 9: 23.
42. Vindevogel S, Schryver MD, Broekaert E, Derluyn I (2013) Challenges Faced by Former Child Soldiers in the Aftermath of War in Uganda. *Journal of Adolescent Health* 52: 757-764.
43. Amone-P'Olak K, Stochl J, Ovuga E, Abbott R, Meiser-Stedman R, et al. (2014) Postwar environment and long-term mental health problems in former child soldiers in Northern Uganda: the WAYS study. *Journal of Epidemiology and Community Health* 68: 425-430.
44. Vindevogel S, Coppens K, Schryver MD, Loots G, Broekaert E, et al. (2013) Beyond child soldiering: The interference of daily living conditions in former child soldiers' longer term psychosocial well-being in northern Uganda. *Global Public Health* 8: 485-503.
45. Saile R, Ertl V, Neuner F, Catani C (2014) Does war contribute to family violence against children? Findings from a two-generational multi-informant study in Northern Uganda. *Child Abuse and Neglect* 38: 135-146.
46. Saile R, Neuner F, Ertl V, Catani C (2013) Prevalence and predictors of partner violence against women in the aftermath of war: a survey among couples in northern Uganda. *Social Science and Medicine* 86: 17-25.
47. Vinck P, Pham PN, Stover E, Weinstein HM (2007) Exposure to War Crimes and Implications for Peace Building in Northern Uganda. *JAMA* 298: 543-554.
48. Zwissler B, Hauswald A, Koessler S, Ertl V, Pleiffer A, et al. (2012) Memory control in post-traumatic stress disorder: evidence from item method directed forgetting in civil war victims in Northern Uganda. *Psychological Medicine* 42: 1283-1291.
49. Norris FH, Sloane LB (2007) The Epidemiology of Trauma and PTSD. In: Friedman MJ, Keane TM, Resick PA (Eds), *Handbook of PTSD*, New York: Guilford.

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