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War experiences, general functioning and barriers to care among former child soldiers in Northern Uganda: the WAYS study

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ABSTRACT

Background Exposure to war is associated with considerable risks for long-term mental health problems (MHP) and poor functioning. Yet little is known about functioning and mental health service (MHS) use among former child soldiers (FCS). We assessed whether different categories of war experiences predict functioning and perceived need for, sources of and barriers to MHS among FCS.

Methods Data were drawn from an on-going War-affected Youths (WAYS) cohort study of FCS in Uganda. Participants completed questionnaires about war experiences, functioning and perceived need for, sources of and barriers to MHS. Regression analyses and parametric tests were used to assess between-group differences.

Results Deaths, material losses, threat to loved ones and sexual abuse significantly predicted poor functioning. FCS who received MHS function better than those who did not. Females reported more emotional and behavioural problems and needed MHS more than males. FCS who function poorly indicated more barriers to MHS than those who function well. Stigma, fear of family break-up and lack of health workers were identified as barriers to MHS.

Conclusions Various war experiences affect functioning differently. A significant need for MHS exists amidst barriers to MHS. Nevertheless, FCS are interested in receiving MHS and believe it would benefit them.

Keywords care, mental health problems, Northern Uganda, war-affected population

Introduction

During the two-decade war in Northern Uganda (1986–2006), ~50 000 people including 30 000 children were abducted and held in rebel captivity.[1] In captivity, they were tortured, sexually assaulted or raped, were involved in combat and witnessed and perpetrated atrocities.[2–4] The widespread and prolonged nature of this abuse raises important questions about the effect of their experience on mental health and functioning and the need for mental health services (MHSs).[1,5–7] Exposure to war events is associated with risks of long-term mental health problems (MHP), including post-traumatic stress disorder, depression, anxiety, substance and drug abuse, and impairment in general

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functioning.[6,8–12] Although previous studies have documented MHP associated with the war in Northern Uganda, little is known about general functioning of survivors and their needs for, use of and barriers to MHSs.[2–5,13] Yet this knowledge is vital for informing policy and improving MHS for former child soldiers (FCS)[14–17] We are not aware of any studies that have assessed these needs among the FCS in the Great Lakes region, especially Northern Uganda.

The present study assessed the influence of different categories of war experiences on functioning and the need for, use of and barriers to MHS in a cohort of FCS in Northern Uganda. The objectives were as follows: (i) to assess gender differences in number and category of war experiences, (ii) to assess the extent to which different categories of war experiences predict general functioning and (iii) to assess between-group differences as follows: (a) identify the proportion of FCS who experience difficulties with functioning, (b) compare the functioning of war-affected youths who received or did not receive MHS since reintegration into the community and (c) investigate the need for, use of and barriers to MHS.

Previous studies reported mixed findings regarding gender differences in general functioning. For example, a study conducted with FCS in Sierra Leone indicated that boys who experienced rape or sexual assault generally had poorer functioning than girls who experienced the same.[13] Conversely, a study in South Sudan with a similar population of FCS indicated that girls were more vulnerable regarding functioning and MHP.[18] Likewise, in a cohort profile of participants in this study, female FCS functioned less optimally than male youths.[19] Therefore, we hypothesize that various war experiences influence general functioning differently across gender.

Methods

Sample

Participants had consented to enter a longitudinal study, the War-Affected Youths Survey (WAYS) employing a cohort research design. The WAYS study recruited FCS from five districts in Northern Uganda that were most affected by the conflict (Gulu, Amuru, Nwoya, Pader and Kitgum). The cohort profile of the WAYS study is described in detail elsewhere.[19] A list of eligible FCS, compiled for the districts by UNICEF, was used alongside the following inclusion criteria: (i) history of abduction by rebels, (ii) having lived in rebel captivity for at least 6 months and (iii) aged between 18 and 25 years. In total, 650 participants met the inclusion criteria and were invited through their local council leaders to participate in the study. Data were collected from 539 representing 83% of those invited. The baseline assessment was conducted from June to September 2011, five years after the war ended.

Measures

War experiences

To assess individual exposure to different war events, we used items from the War Trauma Screening Scale.[20] The War Trauma Screening Scale (UNICEF 2010) was developed for use in Bosnia and later adapted for use in Northern Uganda and Sierra Leone.[21,22] The questionnaire was adapted by our research team to better capture the context of the war in Northern Uganda, with the addition of an item on sexual abuse. The adapted instrument contained 52 items capturing a diversity of war-related experiences (listed in Table 2). Items were coded for occurrence (1) versus absence (0), such that the higher the total score, the more war events a participant experienced.

Post-war mental health services

Upon return from captivity, the majority of the FCS passed through rehabilitation centres, operated by non-governmental organizations (NGOs), where they were rehabilitated before being reunited with their parents, guardians or relatives.[23] To assess whether the participants went through rehabilitation before being reintegrated into the community, participants were asked 'Did you pass through a rehabilitation centre upon return from rebel captivity?' One question was used to assess the level of MHS: 'Did you receive any treatment or counselling from any health/social worker about any emotional and behavioural problems you were going through as a result of your past war experiences?' Barriers to MHS assessed by 11 items are included in Table 5.

General functioning

Difficulties performing daily tasks and activities were used as a proxy for general functioning.[21,22] The measure comprised 13 items scored on a 0–4 Likert scale, ranging from 0—not difficult, to 4—very difficult. General functioning was indexed by the sum score with higher scores representing more difficulties functioning. The possible scores ranged from 0 to 52. For the current study, the Cronbach alpha for this scale was 0.84.

Prior to the analyses, we decided to dichotomize the measure of functioning using the 75th percentile to demarcate the presence or absence of difficulties with general functioning. This cut-off was selected to identify an impaired group. To assess the possibility of misclassification of the presence or absence of difficulties, two sensitivity analyses were conducted: one with a cut-off at 85th percentile and another with a cut-off at the 65th percentile.

Participants were also asked whether they were interested in receiving help for emotional and behavioural problems and

their perception of barriers to MHS in their communities. Perceived sources of help were assessed by a list of agencies in the region that provided help with emotional and behavioural problems (listed in Table 5). Participants checked preferred sources of help.

Participant demographic characteristics

A demographic inventory collected information on sex, age, duration in captivity, parental status and number of children.

Data collection

The university-educated research assistants conducting fieldwork for the WAYS study received intensive training in data collection, study background and detailed questionnaire content. The research assistants administered the questionnaire to participants in their homes, nearby trading centres or community halls. A clinical psychiatric officer was included in the research team to make referrals to the Regional Referral Hospital in case of a mental health emergency such as severe depression with a potential for harm. The Institutional Review Board of Gulu University approved the WAYS study.

Statistical analyses

First, we tabulated the demographic characteristics of the study participants. Next, we tabulated all categories of war experiences and computed gender differences using *t*-tests. After that, general functioning was regressed on each category of war event in a univariable analysis stratified by gender. Subsequently, general functioning was regressed on all categories of war events that were significant in the univariable analyses in a multivariable regression analysis differentially by gender. Categories of war experience were standardized to a mean of 0 and SD of 1 (z scores). Finally, between-group differences were assessed for significance using *t*-tests for continuous variables and chi-square tests for independence for categorical variables. All analyses were conducted using Stata version 12.

Results

Demographic characteristics of participants are presented in Table 1. Most FCS were abducted before the age of 15. The majority spent about three years in captivity. Female FCS stayed longer in captivity and experienced more difficulties with functioning than their male counterparts ($t = 2.62$, $P < 0.05$).

Table 1 Demographic characteristics of the study participants

	Male, n *(%)*	*Female,* n *(%)*	*Total,* n *(%)*
Sample	329 (61)	210 (39)	539 (100)
Enrolled in school at time of abduction	290 (87.87)	165 (78.57)	455 (84.4)
Currently enrolled in school	59 (72.84)	22 (27.16)	81 (15)
Age at baseline	22.86 (SD = 2.06, range = 18–25)	21.92 (SD = 2.83, range = 18–25)	22.39 (SD = 2.03, range = 18–25)
Age groups			
18–21 years	130 (39.51)	83 (39.52)	213 (39.52)
22–25 years	199 (60.49)	127 (60.48)	326 (60.48)
Marital status			
Married	220 (66.87)	116 (55.24)	336 (62.34)
Separated	29 (8.81)	29 (13.81)	58 (10.76)
Divorced	6 (1.82)	17 (8.10)	23 (4.27)
Unmarried	74 (22.49)	48 (22.86)	122 (22.63)
Married to fellow abductees	87 (36.10)	83 (59.71)	170 (44.74)
Duration in captivity	2.91 (SD = 2.69, range = 0.5–17.75)	3.48 (SD = 3.40, range = 0.5–15.00)	3.13 (SD = 2.99, range = 0.5–17.75)
0.5–1.00 years	79 (24.01)	61 (29.05)	140 (25.97)
1.01–3.00 years	157 (47.72)	75 (35.71)	232 (43.04)
3.01–5.00 years	46 (13.98)	30 (14.29)	76 (14.10)
5.00 + years	47 (14.29)	44 (20.95)	91 (16.88)
Age at abduction	14.96 (SD = 4.30, range = 7–22)	12.86 (SD = 3.72, range = 7–20)	14.14 (SD = 4.21, range = 7–24)
Abducted at <10 years	23 (6.99)	32 (15.38)	55 (10.24)
Abducted aged 11–15	176 (53.50)	142 (68.27)	318 (69.46)
Abducted aged 16–20	85 (25.84)	22 (10.58)	107 (19.93)
Abducted age 20+	45 (13.68)	12 (5.77)	57 (10.61)
General functioning	14.81 (SD = 10.41, range = 0–44)	17.50 (SD = 11.57, range = 0–46)	15.84 (SD = 10.94, range = 0–46)

Table 2 Number of war events experienced by participants by gender

Serial No.	*Categories of war events*	*Male Yes (n %)*	*Female Yes (n %)*	t-*test, P-value*	*Total Yes (n %)*
A	Direct physical contact with harm				
1	Were you ever seriously injured during the war?	255 (77.5)	143 (68.4)	$t = 3.75$, $P < 0.05$	398 (74.0)
2	Were you ever so cold during the war that you strongly believed you were going to die?	314 (95.4)	196 (93.8)		510 (94.8)
3	Were you taken prisoner or confined in a detention camp during the war?	271 (82.4)	157 (74.8)		428 (79.4)
4	Were you physically tortured during the war?	316 (96.3)	192 (91.9)		508 (94.6)
5	Were you physically assaulted during the war?	269 (81.8)	145 (69.4)		414 (77.0)
6	During the war, were you deprived of food or water for so long that you strongly believed you would die?	276 (83.9)	166 (79.4)		442 (82.2)
7	During the war, did you witness someone being killed or severely injured?	326 (99.1)	197 (94.3)		523 (97.2)
B	Witnessing violence				
8	During the war, did you see the body of someone who had been killed?	326 (99.1)	207 (99.0)	$t = 3.16$, $P < 0.05$	533 (99.1)
9	During the war, did you see someone who was severely injured?	328 (99.7)	204 (97.6)		532 (98.9)
10	During the war, did you touch or carry someone who had been wounded or killed?	287 (87.2)	148 (70.9)		435 (80.9)
11	Did you witness someone being physically assaulted during the war?	329 (100)	205 (98.1)		534 (99.3)
12	Did you witness someone being tortured during the war?	327 (99.4)	202 (96.7)		529 (98.3)
13	During the war, did you witness someone being abducted or taken prisoner?	322 (97.9)	204 (97.6)		526 (97.8)
14	Did you see someone who was extremely distraught (e.g. they had just learned of the death of a loved one)?	246 (74.8)	169 (80.9)		415 (77.1)
15	During the war, did you witness a loved one being killed, severely injured or tortured?	312 (94.8)	192 (91.9)		504 (93.7)
16	During the war, did you directly witness the massive destruction of property, such as homes, schools, etc.?	322 (97.9)	204 (97.6)		526 (97.8)
17	During the war, did you witness someone being killed or severely injured?	326 (99.1)	197 (94.3)		523 (97.2)
C	Physical threat				
18	Did a bullet ever come so close to you that you could have been seriously hurt or killed?	314 (95.4)	202 (97.1)	$t = 0.66$, ns	516 (96.1)
19	Did a grenade or bomb ever land so close to you that you could have been seriously hurt or killed?	299 (90.9)	190 (90.9)		489 (90.9)
20	During the war, did enemy soldiers forcibly enter your residence?	311 (94.5)	195 (93.3)		506 (94.1)
21	Did anyone personally threaten to kill or seriously hurt you during the war?	318 (97.0)	191 (91.4)		509 (94.8)
22	Was there ever a time during the war when you strongly believed you would be seriously hurt or killed?	317 (96.4)	202 (96.7)		519 (96.5)
23	Were you ever forced to serve as a human shield for enemy troops, equipment or installations?	184 (55.9)	73 (35.2)		257 (47.7)
D	Deaths				
24	Was your father killed during the war?	110 (33.7)	88 (41.9)	$t = -1.36$, ns	198 (36.9)
25	Was your mother killed during the war?	52 (16.0)	52 (24.8)		104 (19.4)
26	Did a loved one commit suicide during the war?	144 (44.2)	94 (44.8)		238 (44.4)
27	Was a brother or sister killed during the war?	173 (53.1)	115 (54.8)		288 (53.7)
28	Was a close member of your extended family killed during the war?	316 (96.9)	206 (98.1)		522 (97.4)
29	Was a close personal friend killed during the war?	288 (88.3)	175 (83,3)		463 (86.4)
30	Did a loved one die of natural causes (e.g. heart attack, cancer, old age) during the war?	187 (57.4)	121 (57.9)		308 (57.6)

Continued

Table 2 Continued

Serial No.	*Categories of war events*	*Male Yes (n %)*	*Female Yes (n %)*	t-*test,* P-*value*	*Total Yes (n %)*
E	Harm to loved ones				
31	Was a loved one physically assaulted during the war?	320 (98.5)	201 (95.7)	$t = 3.07$, $P < 0.05$	521 (97.4)
32	During the war, was a loved one seriously physically injured?	319 (98.2)	197 (93.8)		516 (96.5)
33	Was a loved one tortured during the war?	320 (99.4)	201 (96.2)		521 (98.1)
34	Was a loved one taken prisoner or held in a detention camp during the war?	298 (91.7)	182 (86.7)		480 (89.7)
F	Material loss				
35	Was your home seriously damaged in the war?	319 (98.5)	202 (96.2)	$t = 1.41$, ns	521 (97.6)
36	Were you forced to leave your home because of the war?	322 (99.4)	206 (98.1)		528 (98.9)
37	Were you forced to leave your village/town because of the war?	317 (97.8)	203(96.7)		520 (97.4)
38	Did your family lose animals because of the war (forced to abandon it, taken by force by rebels, army, etc.)?	317 (97.8)	206 (98.1)		523 (97.9)
39	Did your family lose many valuable possessions because of the war (e.g. house, farm, granary, etc.)?	317 (97.8)	205 (97.6)		512 (95.0)
G	Threat to loved one(s)				
40	During the war, did a loved one serve on the front lines or have other very dangerous duties?	224 (68.7)	140 (66.7)	$t = 1.58$, ns	364 (67.9)
41	During the war, did a loved one have a life-threatening physical illness (cancer, heart attack)?	184 (56.6)	119 (56.7)		303 (56.6)
42	During the war, was a loved one missing or unaccounted for, and you greatly feared s/he had died?	290 (89.5)	183 (87.1)		473 (88.6)
43	During the war, did someone personally threaten to seriously hurt or kill a love one?	290 (89.0)	167 (79.5)		457 (85.3)
H	Separations				
44	During the war, were you physically separated from a loved one?	316 (96.9)	199 (94.8)	$t = 0.14$, ns	515 (96.1)
45	During the war, were you separated from both of your parents (or primary caretaker)?	317 (97.2)	208 (99.1)		525 (98.0)
I	Displacement				
46	Were you forced to leave your home, village/town because of the war?	320 (98.2)	209 (99.5)	$t = 2.07$, $P < 0.05$	529 (98.7)
47	Were you forced to change to a new school (or place of work) because of the war?	255 (78.2)	142 (67.9)		397 (74.2)
48	Did you live in a collective refugee centre during the war?	312 (96.0)	193 (91.9)		505 (94.4)
49	Did you leave the country because of the war?	40 (12.5)	26 (12.5)		66 (12.5)
J	Involvement in hostilities				
50	During the war or conflict in your homeland, did you fight in the army or warring faction?	294 (90.0)	140 (66.7)	$t = 7.19$, $P < 0.05$	434 (80.8)
51	Did you receive any training during the war by the army or a warring faction?	303 (93.5)	165 (79.3)		468 (89.0)
K	Sexual assault/rape				
52	During a war or conflict in your homeland, did enemies/soldiers ever sexually assault or rape you?	33 (10.5)	135 (64.6)	$t = -15.76$, $P < 0.05$	168 (32.1)
L	Total number of war experiences	301 (91.5)	202 (96.2)	$t = 1.65$, ns	504 (93.5)

ns, not significant.

Table 3 Regression analyses of different categories of war events on general functioning

		Male			*Female*			*Total*		
		β	*(95% CI)*	P-*value*	*β*	*(95% CI)*	P-*value*	*β*	*(95% CI)*	P-*value*
1	Direct physical harm to self	0.07	−0.06, 0.19	ns	0.10	−0.04, 0.25	ns	0.06	−0.03, 0.16	ns
2	Witnessing violence	0.08	−0.05, 0.21	ns	0.09	−0.05, 0.23	ns	0.07	−0.02, 0.17	ns
3	Physical threat to self	0.02	−0.09, 0.12	ns	0.08	−0.11, 0.19	ns	0.02	−0.06, 0.11	ns
4	Deaths	0.20	0.13, 0.44	$P < 0.01$	0.28	0.14, 0.42	$P < 0.001$	0.24	0.12, 0.45	$P < 0.05$
5	Harm to loved ones	0.03	−0.13, 0.19	ns	0.06	−0.07, 0.18	ns	0.03	−0.06, 0.13	ns
6	Material losses	0.13	0.01, 0.25	$P < 0.05$	0.17	0.04, 0.30	$P < 0.05$	0.11	0.03, 0.19	$P < 0.05$
7	Threat to loved ones	0.11	0.01, 0.23	$P < 0.05$	0.21	0.06, 0.36	$P < 0.01$	0.10	0.01, 0.20	$P < 0.05$
8	Separation	−0.04	−0.14, 0.07	ns	0.23	−0.01, 0.46	ns	0.02	−0.08, 0.12	ns
9	Displacement	0.13	−0.02, 0.27	ns	0.09	−0.03, 0.21	ns	0.10	0.01, 0.19	$P < 0.05$
10	Involvement in hostilities	0.01	−0.14, 0.16	ns	0.01	−0.13, 0.13	ns	−0.03	−0.13, 0.06	ns
11	Sexual abuse/assault	0.18	0.02, 0.35	$P < 0.05$	0.14	0.01, 0.29	$P < 0.05$	0.19	0.10, 0.28	$P < 0.001$
12	Total war experiences	0.33	0.21, 0.46	$P < 0.001$	0.36	0.22, 0.49	$P < 0.001$	0.34	0.25, 0.43	$P < 0.001$

RMSEA, root mean square error of approximation; CFI, comparative fit indices; SE, standard error; CI, confidence interval; ns, not significant.

Table 4 Perceived need for help, use of MHSs and perceived sources of help for MHP

		Male n *(%)*	*Female* n *(%)*	χ^2 *(1,* N = *539),* P-*value*	*Total* N *(%)*
Need for service					
1	Did you pass through a rehabilitation centre upon return from captivity?	217/316 (68.67)	141/210 (67.14)	$\chi^2 = 65.23$, $P < 0.05$	358/526 (68.08)
2	Acknowledged a problem while in the community	188/302 (62.25)	154/188 (81.91)	$\chi^2 = 223.28$, $P < 0.05$	342/490 (69.98)
3	Saw a health worker about emotional/behavioural problem	49/316 (15.51)	38/203 (18.72)	$\chi^2 = 220.67$, $P < 0.05$	87/519 (16.76)
4	Interested in receiving help	163/264 (61.74)	178/202 (88.12)	$\chi^2 = 118.42$, $P < 0.05$	341/466 (73.18)
Perceived sources of help for MHP					
1	Counsellors/social workers	217/298 (72.82)	161/203 (79.31)	$\chi^2 = 131.40$, $P < 0.05$	378/501 (75.49)
2	Health workers	201/304 (66.12)	173/201 (86.07)	$\chi^2 = 133.87$, $P < 0.05$	374/505 (74.65)
3	Religious leaders	182/301 (60.47)	154/191 (80.63)	$\chi^2 = 201.23$, $P < 0.05$	336/492 (68.29)
4	Friends	160/301 (59.70)	156/197 (79.19)	$\chi^2 = 51.75$, $P < 0.05$	316/465 (67.96)
5	Parents/relatives/siblings	181/308 (58.77)	140/192 (72.92)	$\chi^2 = 51.00$, $P < 0.05$	321/500 (64.20)
6	Local leaders	150/301 (49.83)	129/201 (60.20)	$\chi^2 = 9.59$, $P < 0.05$	279/502 (55.58)
7	Elders/opinion leaders	152/303 (50.17)	123/202 (60.10)	$\chi^2 = 5.97$, $P < 0.05$	275/505 (54.46)
8	Traditional healers/rituals	123/256 (48.05)	48/103 (46.60)	$\chi^2 = 0.84$, ns	171/359 (47.63)

ns, not significant.

Table 2 presents the categories of war events by gender. Generally, the number of war events did not differ by gender except for a few such as witnessing violence and sexual assault/rape. About 10% of males reported sexual assault/rape compared with 65% of females.

Deaths, material losses, threats to loved ones and sexual abuse or rape significantly predicted poor functioning in a univariable regression analyses (Table 3). When included simultaneously in a multivariate regression, all these four categories of war events remained significant, showing that each accounted for unique and significant variance in general functioning.

When, in a sensitivity analysis, the cut-off was changed to 85th percentile, the result was as follows: OR: 1.49 (CI: 1.19, 1.87). This was similar to when the cut-off point was set at 75th percentile: OR: 1.48 (CI: 1.18, 1.86), indicating

Table 5 Perceived barriers to seeking MHSs among study participants stratified by levels of general functioning

	Barriers to seeking MHSs	*N ≤ 75th percentile (N = 404, 75%) Functioning better (%)*	*N ≥ 75th Percentile (N = 135, 25%) Functioning poorly (%)*	*χ^2 (1, N = 539), P-value*
1	Fear of stigma/discrimination from community	238/321 (74.14)	104/123 (82.11)	$\chi^2 = 5.45$, $P < 0.05$
2	Fear of family break-up	203/334 (60.78)	91/118 (77.11)	$\chi^2 = 50.11$, $P < 0.05$
3	Lack of money to transport myself	208/311 (66.88)	83/112 (74.11)	$\chi^2 = 56.15$, $P < 0.05$
4	Distant health facility (hospital)	128/308 (41.56)	79/107 (73.83)	$\chi^2 = 8.02$, $P < 0.05$
5	Lack of trust of help providers	179/329 (54.41)	81/113 (71.68)	$\chi^2 = 79.56$, $P < 0.05$
6	Busy farming/business	258/349 (73.93)	79/119 (66.39)	$\chi^2 = 62.35$, $P < 0.05$
7	Do not know where to go	201/310 (64.84)	73/112 (65.18)	$\chi^2 = 30.22$, $P < 0.05$
8	Traditional healers are untrustworthy	192/347 (55.33)	72/121 (59.50)	$\chi^2 = 49.83$, $P < 0.05$
9	Do not know where to receive help from	126/208 (60.58)	61/103 (59.22)	$\chi^2 = 10.87$, $P < 0.05$
10	Counselling does not help much	30/299 (10.03)	41/89 (40.07)	$\chi^2 = 82.29$, $P < 0.05$
11	Fear of problems worsening	28/320 (08.75)	37/97 (38.14)	$\chi^2 = 126.08$, $P < 0.05$

ns, not significant.

that ∼50% of those with scores above the 75th percentile were functioning poorly. When the cut-off was changed to the 65th percentile, the results was as follows: OR: 1.03 (CI: 0.89, 1.28).

Data concerning perceived need for MHS support and sources of help are displayed in Table 4. Nearly 70% of the FCS passed through rehabilitation centres upon return from captivity.[23,24] However, there was no significant difference in functioning between those who passed through rehabilitation centres and those who did not ($t = 1.32$, $P = .18$).

While in the communities, only a minority of participants reported seeing a mental health worker, despite ∼70% acknowledging that they experience emotional and behavioural problems such as anxiety, nightmares, being easily irritated and hearing voices. FCS who received MHS functioned significantly better (mean = 13.40, 95% CI: 11.64, 15.16) than those who did not (mean = 16.61, 95% CI: 15.43, 17.79; $t = 2.83$, $P < 0.05$). The majority of FCS expressed interest in receiving help, particularly females (Table 4).

The proportion of FCS who sought help from MHS was significantly greater for female than male participants. FCS identified counsellors/social workers, health workers and religious leaders/pastors as important sources of help for their MHP. Elders/opinion leaders and traditional leaders were the least important sources of help.

Participants experiencing difficulties functioning reported significantly more barriers to MHS than those who functioned better (Table 5). The majority reporting poor functioning identified stigma/discrimination, fear of family break-up and lack of health workers as the major barriers to seeking help (Table 5).

Discussion

Main findings of the study

Deaths, material losses, threat to loved ones and sexual abuse significantly predicted poor functioning. FCS who received MHS functioned better than those who did not. Female FCS reported more emotional and behavioural problems, were more interested in receiving help and needed MHS more than male FCS. FCS who functioned poorly reported more barriers to MHS than their counterparts who functioned well. Stigma, fear of family break-up and lack of health workers were identified as barriers to MHS.

The implications of this study are that it is important to evaluate the different categories of war events experienced to inform intervention to mitigate the adverse consequences of war among FCS. The gender differences observed suggest that MHS should be cognisant of gender differences. Interestingly, rehabilitation immediately after captivity showed no significant effects on FCS. This could have been because the services offered by the rehabilitation centres might not have met the immediate needs and were limited by the settlement, insecurity and poverty at the time.

Although few FCS reported that local leaders, elders, opinion leaders and traditional leaders were sources or agencies for help with emotional problems, previous studies considered them vital for this purpose. It is possible that the

long period of forced displacement in camps and scattered settlements have left the traditional leaders with no homogenous communities to culturally supervise. Likewise, poverty and material deprivation consequent upon the war have left the traditional structures fragmented and weak.[23] Studies are planned in future to assess obstacles to MHS.

What this study adds

This study is the first to assess the influence of many categories of war events on functioning simultaneously. We have identified that different categories of war experience differentially impact on general functioning. The categories of war events that were uniquely associated with general functioning should be taken into consideration when planning MHS. The implication of this finding is to upscale efforts to address barriers to seeking MHS among FCS. For example, ambulatory MHS, creating awareness and changes in the models of MHS delivery, such as increases in the allocation of resources for MHS at lower primary MHS levels and the provision of confidential counselling programmes, should be urgently prioritized. Unmet needs and barriers to MHS contribute significantly to reduced uptake. Therefore, public health approaches such as psycho-education and teaching recovery techniques for those with MHP are important, especially where there is lack of health workers.

Limitations and strengths of the study

Potential limitations to this study include the self-reported method of data collection, and the results do not represent definitive psychological or psychiatric diagnoses but relate to difficulties with general functioning. However, dichotomizing functioning as poor (scores $\geq$75th percentile) in this study helped to identify a highly impaired group of FCS and thus enhanced its public health and clinical relevance. In addition, administering the instrument six years after end of the war makes it optimal for assessing the long-term risk of poor functioning associated with the aftermath of war. Further assessments of this cohort are planned as part of the longitudinal design and promise to provide more detailed investigation of the long-term effects of the war on the mental health of FCS.

Conclusions

This study provides an initial assessment of poor functioning and need for MHS among FCS in Northern Uganda. Certain categories of war events such as witnessing violence, deaths and experiencing sexual abuse are more toxic and uniquely associated with poor functioning than others such as separation. Overall significant barriers to MHS exist alongside a strong demand for and awareness of the perceived needs and benefits of MHS among FCS.

Authors' contribution

K.A.P. designed the project, carried out research, performed analyses and drafted the manuscript. P.B.J. R.M., P.S.A., J.A. and E.O. contributed to project design and revised the drafted manuscript. R.A. and R.M. read, corrected and offered suggestions to improve all the drafts. All authors read and approved the final manuscript.

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