

## ORIGINAL PAPER

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## Post-traumatic stress disorder (PTSD) after stigma related events in HIV infected individuals in Nigeria

Received: 29 October 2007 / Revised: 4 January 2009 / Published online: 18 February 2009

**Abstract** *Background* One of the most distressing concerns of many people living with HIV in sub-Saharan Africa is the stigma. Intense stigma may be traumatic. This study aimed to investigate the probability and correlates of Posttraumatic stress disorder (PTSD) following intense stigmatizing events and situations in HIV infected individuals in Nigeria. *Methods* Adult sero-positive attendees of an HIV care centre ( $N = 190$ ) completed questionnaires regarding sociodemographic and clinical details; the 12-item General Health Questionnaire (GHQ-12) and the Rosenberg's Self-Esteem Scale. The clients were then interviewed for the presence of stigma related PTSD with a modified version of the mini international neuropsychiatry interview (MINI). *Results* About 2/3 of the participants had experienced at least an intense HIV-related stigmatizing event or situation. The rate of HIV-stigma related PTSD was 27.4%. Independent predictors of HIV stigma-related PTSD included past history of traumatic events (Single event, OR 2.28, 95% CI 1.08–4.73; Multiple events, OR 9.47, 95% CI 2.97–32.20), low self esteem (OR 6.52, 95% CI 2.59–

16.55), poor level of social support (OR 3.33, 95% CI 1.24–9.79) and presence of general psychopathology (OR 2.18, 95% CI 1.07–4.44). *Conclusion* PTSD may not be specific to traumatic events alone. There is a possibility of PTSD after an intense stigmatizing event or situation. While the validity for the validity of HIV-stigma related PTSD warrants further investigation, stigma needs to be considered when planning rehabilitation strategies for HIV infected individuals in sub-Saharan Africa. A closer attention to self esteem, level of social support and presence of psychopathology is needed in these individuals.

**Key words** post-traumatic stress disorder – stigma – sub-Saharan Africa – HIV – anxiety

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### Introduction

Post-traumatic stress disorder (PTSD) is a reaction to an event, either personally experienced or witnessed, which involves actual or threatened death or serious injury or a threat to the physical integrity of self or others [1]. It is the only psychiatric condition in the DSM-IV that requires a specific event to have occurred as a criterion for the diagnosis. Recent researches however, have shown that PTSD is not specific to traumatic events alone, but can also arise after life events [2] and life threatening conditions like cancer [4] and HIV/AIDS [10, 21]. The development of a severe life-threatening illness (such as HIV/AIDS) may in itself be a traumatic event or may further compound an ongoing history of trauma. Not surprising, the rates of PTSD in the HIV-infected population are much higher than the general population. The estimates vary widely ranging from 9.4 to 53.8% depending on the instrument used in diagnosing PTSD and the population studied [9–11, 13, 19].

With an estimated 33.2 million [30.6–36.1 million] people living with HIV infection worldwide [21], the impact of a generalized epidemic is most obvious in countries in sub-Saharan Africa with an estimated 22.5 million [20.9–24.3 million] people living with HIV, or 68% of the global total living with HIV living in this region [21]. Apart from the disability, poor quality of life and shortened life survival caused by the infection, one of the most distressing factors to most individuals with HIV infection in sub-Saharan Africa is stigma. Illiteracy and lack of knowledge regarding the nature of transmission and possible treatment of HIV infection contributes to the high level of stigma in this region. In their day to day life, the HIV infected persons are often treated as outcasts and neglected with the community maintaining the barest contact with them. We hypothesize that, in persons with HIV infection, intense stigmatizing situations may be traumatic enough to serve as DSM-IV criterion A1 for PTSD.

Although some authors have argued that PTSD can occur as a direct response to HIV infection [10, 11], none have researched into the possibility of stigmatizing situation serving as the event provoking the PTSD. This study aimed to investigate the probability of PTSD in persons with HIV infection following intense stigmatizing events and situations.

## Methods

### Subjects

For 3 months, participants in the study were recruited from persons attending “Living Hope Care” an HIV- support/care centre for persons with HIV infection located in Ilesa, Osun state, Western Nigeria. The centre provides support, counseling and free antiretroviral drugs to about 200 HIV-infected persons in the state. All the attendees of the care centre meeting the inclusion criteria were targeted for interview. Inclusion criteria include age over 18 years and a sero-positive test result not less than 1 month old. Excluded are subjects who were too ill to complete the questionnaires or had significant neurological disorders including traumatic brain injury. Out of the 198 persons approached, only 190 agreed to participate in the study. There was no statistically significant difference in the sociodemographic and clinical profiles of those who refused participation and the participants.

### Testing procedure

Informed consent was obtained from the participants after the aims and objectives of the study were explained to them. The Ethics and Research Committee of the Obafemi Awolowo University Teaching Hospitals Complex approved the study protocol.

The participants were first administered a pro-forma asking about sociodemographic details like age, sex, marital status, and level of education. A likert scale format was used to measure the level of social support from spouse/family (poor, fair and good social support). Socioeconomic status was derived from occupational status and income per month. Clinical details elicited from the clients include clinical stage of the disease, time of diagnosis, any present medical problems, previous hospital admissions due to HIV and the length of Antiretroviral (ARV) drugs use.

The participants also completed the 12-item general health questionnaire (GHQ-12) [5] as a measure of their general psychopathology. The GHQ-12 is a well used instrument for diagnosing general psychopathology. The English and Yoruba translated versions had been validated in Nigeria with a cut-of score of 3 and above indicating presence of clinically significant psychopathology [6]. The participants also completed the Rosenberg’s Self-Esteem Scale [15] as a measure of their levels of self-esteem. It is a 10-item questionnaire; with items answered on a four-point Likert scale from strongly agree to strongly disagree. Higher scores on the scale reflect higher self-esteem. It has been used and validated among Nigerians.

Two trained psychiatrist then separately interviewed the participants with a modified version of the PTSD module of the mini international neuropsychiatry interview (MINI) [17]. The MINI was designed as a brief structured interview for the major Axis I psychiatric disorders in DSM-IV. Validation and reliability studies have been done for MINI with the results showing that the MINI has acceptably high validation and reliability scores. Clinicians can use it, after a brief training session, but lay interviewers require training that is more extensive. It had been used variously in Nigerian subjects. The MINI is divided into modules each corresponding to a diagnostic category. Screening question (s) is presented at the beginning of each module. The PTSD module of the MINI was modified with the criterion A1 reworded as “*In the past 1 month, have you experienced, witnessed or had to deal with an extremely traumatic stigmatizing event or situation related to your HIV status that included actual or threatened serious injury or shame to you or someone else?*” The participants were then asked to list the stigmatizing events or situations before continuing with the rest of the PTSD module interview. The inter-rater reliability between the two psychiatrists interview was 0.90 measured by Cohen’s kappa. Lastly, the participants were asked if had ever witnessed or experienced or had had to deal with an extremely traumatic event (not HIV-stigma related) in the past.

### Statistical analysis

The Statistical package for the Social Sciences 11 (SPSS.11) program was used for statistical analysis. Participants were classified as cases of stigma-related PTSD based on the MINI interviews. Results were calculated as frequencies (%), means and standard deviations. Chi-square and students *t* test were used to calculate the differences between groups. All tests were two-tailed and significance was put at <0.05. Significant variables were entered into a multiple logistic regression analysis and Odds ratio (OR) and 95% confidence interval (95% CI) was calculated for independent predictors.

## Results

### Sociodemographic and clinical profiles of the participants

The mean age of the participants in years was 31.92 (SD = 12.30) with a range of 18–62 years. There were 86 (45.3%) males. While only 29 (15.3%) were presently married, 32 (16.8%) were widowed. Ninety-one (47.9%) were educated to the secondary school level while 109 (57.3%) were Christians. The participants were mostly (80%) from the Yoruba ethnic group and 62 (32.6%) were from low socioeconomic status. A total of 65 (34.2%) of the participants reported receiving poor social support from family and friends. The mean average length of time the participants had been diagnosed to have HIV in years was 2.26

(SD = 1.21) with a range of 1–7 years. Most (43.2%) had been receiving ARV for less than a year and 21 (11.1%) had had an HIV-related hospitalization at least once. A total of 68 (35.8%) participants had a co-morbid medical problem and while 117 (61.6%) belonged to the centre for disease control (CDC) classification group A (acute HIV infection and asymptomatic) and the rest 73 (38.4%) belonged to group B (Symptomatic but without an AIDS defining condition). The mean GHQ score was 3.21 (SD = 1.98) with a range of 0–7, while the mean Rosenberg self esteem scale score was 16.38 (SD 6.93) with a range of 2–27. A total of 68 (35.8%) had experienced at least a traumatic event in the past.

## ■ HIV-stigma related PTSD

### Criteria A and B

While 117 (61.6%) of the clients had experienced or witnessed a stigmatizing event or situation related to their HIV status, only 78 (41.4%) responded to these experiences with fear, helplessness or horror thereby meeting the modified criterion A of PTSD module (Table 1). The highest percentage (43.2%) of the participants reported to have been verbally assaulted, laughed at or scorned at because of their HIV status (Table 2). Among those experiencing HIV-stigma related events, the mean number of events experienced was 1.79 (SD = 1.03) with arrange of 1–4 events. A total of 65 (34.2%) participants had experienced one HIV-stigma related event, 22 (11.6%) had experienced

**Table 1** The number of participants reporting the symptoms of HIV-stigma related post-traumatic stress disorder (PTSD)

Code	Criterion	No	% of 190
A1	Experienced/witness traumatic stigmatizing situation (HIV-related)	117	61.6
A2	Respond with intense fear, helplessness or horror	78	41.1
B	Re-experience the event in distressing way	67	35.3
C	Avoidance		
C1	Avoided thinking or talking about it	43	22.6
C2	Avoided activities, people or places that reminds	50	26.3
C3	Trouble recalling	47	24.7
C4	Less interested in hobbies or social activities	11	5.8
C5	Detached or estranged from others	33	17.4
C6	Feelings numbed or restricted affect	33	17.4
C7	Felt life will be shortened or die sooner	41	21.6
	Meeting criteria C	56	29.5
D	Arousal		
D1	Difficulty sleeping	34	17.9
D2	Irritable and burst of anger	47	24.7
D3	Difficulty concentrating	54	28.4
D4	Hyper-vigilance	47	24.7
D5	Exaggerated startled response	28	14.7
	Meeting criteria D	67	35.3
F	Interference with work, social activities or cause distress	71	37.4
	Meeting the PTSD diagnosis	52	27.4

**Table 2** Examples of HIV-related stigmatizing events or situations experienced or witnessed by the participants

Events or situations	Frequency (%)
Verbal assault, being laughed at or scorned at because of HIV status	82 (43.2)
Left unattended where you needed help in hospitals, banks, market place, stores, churches/mosques, schools and other public places	48 (25.3)
Refused (or terminated) employment, accommodation, schooling etc. because of HIV status	48 (25.3)
Death of friend/relative close to you with HIV/AIDS	17 (8.9)
Physical assault from people because of HIV status	11 (5.8)
Others	4 (2.1)

two events, 19 (10.0%) had experienced three events and 4 (5.8%) had experienced up to 4 HIV-stigma related events. The PTSD criterion B (Re-experiencing) was met by 67 (35.3%) of the participants (Table 1).

### Criterion C

Eighty-nine (46.8%) reported at least an item of avoidance with a total of 56 (29.5%) participants meeting the criterion C of the PTSD module (3 or more avoidance symptoms). While 50 (26.3%) reported “avoiding activities, people or places that remind them of the event”, 11 (5.8%) reported being “less interested in hobbies and social activities” (Table 1). The mean number of items endorsed was 2.91 (SD = 0.99) with a range of 1–5 items.

### Criterion D

The arousal criterion (2 or more symptoms of arousal) was met by 67 (35.3%) of the participants. Table 1 showed that the most reported symptom (28.4%) was “difficulty in concentrating” while the least reported symptom (14.7%) was “exaggerated startled response”. A total of 97 (51.1%) participants reported at least one arousal symptom with mean number of symptoms reported 2.14 (SD = 0.99) with a range of 1–4 symptoms.

### Criterion F and rate of HIV stigma related PTSD

Seventy-one (37.4%) reported that the symptoms they experienced had significantly interfered with their work, social activities, or had caused significant distress. The total number of participants meeting the full diagnosis for HIV-stigma related PTSD (meeting criterion A, B, C, D and F in the past 1 month was 52 (27.4%).

### ■ Correlates of HIV-stigma related PTSD

Correlation analysis (Table 3) showed that there was no statistical significant relationship between the diagnosis of HIV-stigma related PTSD and age ( $P = 0.552$ ), sex ( $P = 0.421$ ), educational level ( $P = 0.394$ ), religion ( $P = 0.476$ ), ethnicity ( $P = 0.569$ ), socioeconomic status ( $P = 0.771$ ) and length of ARV use ( $P = 0.395$ ). The diagnosis of HIV-stigma related PTSD is however significantly related to perceived level of social support ( $P = 0.015$ ), length of HIV diagnosis ( $P = 0.036$ ), presence of comorbid medical problems ( $P = 0.004$ ), previous HIV-related hospitalization ( $P = 0.001$ ), stage of HIV according to the CDC's classification ( $P = 0.007$ ), GHQ-12 scores ( $P = 0.040$ ), Rosenberg's self esteem scale scores ( $P < 0.001$ ) and past history having witnessed or experienced a traumatic event ( $P < 0.001$ ). When the significant variables were then entered into a stepwise multiple logistic regression analysis, results (Table 4) showed that the variables independently predicting HIV-stigma related PTSD were previous history of traumatic event, self esteem, perceived level of social support and general psychopathology. Analysis showed that medical variables (which all dropped out from the final analysis) correlated (and were confounders) of the GHQ-12. Adding the GHQ-12 to the hierarchy caused these variables to drop out of the

analysis. The OR and 95% CI of the predicting variables are shown in Table 5.

### Discussion

To our knowledge, this study is the first to examine the possibility of stigmatizing situations and events provoking symptoms of PTSD in HIV infected individuals in sub-Saharan Africa. Our findings support those of earlier researchers who have posited that PTSD is not specific to traumatic events alone [2, 12] and can arise as response to life threatening illnesses like HIV/AIDS [9, 20]. However, whereas others have theorized that the development and subsequent treatment of the HIV infection and the AIDS itself served as traumatic events, our study is unique in showing that the social stigma associated with the HIV infection may serve as a trigger for PTSD symptoms. Katz and Nevid [8] had earlier noted that stigma is a predisposing factor to PTSD in HIV infected individuals.

A large percentage (61.6%) of our clients had experienced at one occasion or the other stigmatizing events and situations related to their HIV infection that were severe enough and involved actual or threatened serious injury or shame and loss of

**Table 3** Association between HIV-stigma related post-traumatic stress disorder (PTSD) and some sociodemographic and clinical variables

Variables	Items	$\chi^2$	<i>df</i>	<i>P</i> value
Sex	Male/females	0.648	1	0.421
Marital status	Single/married/separated-divorced/widowed	8.176	3	0.043
Educational level	Nil/primary/secondary/tertiary	2.987	3	0.394
Religion	Christianity/Islam	0.509	1	0.476
Ethnicity	Yoruba/others	0.324	1	0.569
Socioeconomic status	High/average/low	0.520	2	0.771
Social support	Good/fair/poor	8.365	2	0.015
Past trauma history	Nil/once/more than once (multiple)	19.608	2	<0.001
HIV stage (CDC)	Stage A/stage B	7.200	1	0.007
HIV-related hospitalization	Yes/no	10.529	1	0.001
Comorbid medical problems	Yes/no	8.109	1	0.004
Years of ARV use	<1 year/1–2 years/> 2 years	1.856	2	0.395

  

Variables	Mean (SD)Query			<i>t</i>	<i>df</i>	<i>P</i> value
	Total	PTSD	No PTSD			
Age	31.92 (12.30)	32.79 (12.69)	31.59 (12.18)	0.601	188	0.552
Years of HIV diagnosis	2.26 (1.21)	2.56 (1.39)	2.15 (1.12)	2.117	188	0.036
GHQ scores	3.21 (1.98)	3.69 (1.98)	3.02 (1.96)	2.073	188	0.040
Rosenberg scale scores	16.38 (6.93)	13.15 (7.120)	17.89 (6.45)	-4.097	188	<0.001

**Table 4** Logistic regression analysis of the variables independently predicting HIV-stigma related PTSD

Variables	$\beta$	SE	Wald	<i>df</i>	<i>P</i> value
Past history of traumatic event	2.336	0.452	26.736	1	<0.001
Self esteem (Rosenberg scale)	0.151	0.032	21.972	1	<0.001
Perceived level of social support	1.341	0.343	15.268	1	<0.001
General psychopathology (GHQ-12 scores)	0.446	0.143	9.685	1	0.002

**Table 5** Adjusted odds ratio (OR) and 95% confidence interval (95% CI) for the predicting variables associated with HIV-stigma related post-traumatic stress disorder (PTSD)

Variables	Total (n = 190) No	PTSD (n = 52) No (%)	No-PTSD (n = 138)	Adjusted OR (95% CI)
Past history of traumatic events				
Nil	122	23 (18.9)	99	1 (reference)
1 event	52	18 (34.6)	34	2.28 (1.08–4.73)
2 or more (multiple) events	16	11 (68.8)	5	9.47 (2.97–32.20)
Level of self esteem				
High (Rosenberg scale score 21–30)	69	10 (14.5)	59	1 (reference)
Average (Rosenberg scale score 11–20)	81	21 (25.9)	60	2.06 (0.90–4.92).
Low (Rosenberg scale score 0–10)	40	21 (52.2)	19	6.52 (2.59–16.55)
Perceived level of social support				
Good	36	6 (16.7)	30	1 (reference)
Fair	89	20 (22.5)	69	1.45 (0.25–1.87)
Poor	65	26 (40.0)	39	3.33 (1.24–9.79)
Presence of psychopathology				
Absent (GHQ-12 score <3)	71	13 (18.3)	58	1 (reference)
Present (GHQ-12 score 3 or more)	119	39 (32.8)	80	2.18 (1.07–4.44)

integrity to themselves or someone else and 66.7% of those involved in these experiences responded with intense fear, helplessness or horror. Our findings seemed higher than the rate of 18–39% reported in the western literature [7]. Our study showed that about a third of HIV infected individuals experienced the PTSD symptoms of re-experiencing (35.3%), avoidance (29.5%) and arousal (35.3%) in response stigmatizing events that are not per se, traumatic events as stipulated by the DSM-IV criteria.

The rate of HIV-stigma related PTSD found in our study (27.4%) is comparable to those of earlier studies. Kelly and colleague [9] had found a rate of 31% for PTSD due to HIV while in South Africa, Oley et al. [13] reported a rate of 14.8% for PTSD in HIV patients out of which 36.4% was due to the diagnosis of HIV itself.

We found previous history of trauma to be significantly associated with HIV-stigma related PTSD in our study with individuals with multiple expose to trauma more likely to experience HIV-stigma related PTSD (OR 9.47, 95% CI 2.97–32.20). Previous studies have found significant associations between the number of life events and the diagnosis of PTSD in HIV infected individuals [8]. A history of traumatic experiences may impair patients' abilities to handle future stressors like stigmatizing situations. Patients with significant trauma histories may also have clinically significant depressive and anxiety symptoms which may increase the tendency to PTSD.

We found low self esteem, presence of general psychopathology and perceived poor level of social support to be significantly related to HIV-stigma related PTSD in our study. Earlier studies have found significant relationship between PTSD in HIV infected individuals and personality [20], coping strategies and defense styles [14], and hypochondriasis [3]. Low self esteem may be implicated in several of these conditions and depressive symptoms which had been

suggested to be responsible for the observed impact of PTSD on HIV infected individuals [18]. Related to this was the significant association of general psychopathology with HIV-stigma related PTSD in our study which had been similarly reported elsewhere [13, 16]. Poor level of social support had been variously reported to be associated PTSD in HIV infected person [8, 14] and we found that it is equally applicable to HIV-stigma related PTSD in our study.

Our study has several limitations. Majorly, we examined only general psychopathology using the GHQ-12 instead of specific psychiatric co-morbidity (specifically depression). Some of the variables considered in this study (self esteem, concentration) are consistent with major depression which is also a risk factor for worsened PTSD and poorer outcomes. Co-morbidity itself confers risk and worse outcomes. Also, we did not measure possible changes in the socio-economic status of the participants over time. This would have been of significance and a decline in their SES may be expected because part of the stigma variables measured included loss of job, accommodation etc.

In conclusion, our study is in support of the emerging evidence that have shown that PTSD is not specific to traumatic events alone. More than two-third of people with HIV infection had experienced at one occasion or the other stigmatizing events and situations related to their HIV infection and about a quarter may have experienced HIV-stigma related PTSD. We have made a case for the validity of HIV-stigma related PTSD in this study and this warrants further investigation. Correlates of PTSD in this group include past history of traumatic events, lower self esteem, poor perceived level of social support and general psychopathology. All these should be taken into consideration when planning strategies to combat stigma, prevent PTSD and improve quality of life in people with HIV infection in this region.

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