



Post-Traumatic Stress Disorder and its Correlates Among People Living with HIV in Southern Ethiopia, an Institutionally Based Cross-Sectional Study

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Abstract

Post-traumatic stress disorder is a common psychiatric problem more highly prevalent among HIV infected individuals than the general population. This study aims to assess the probable prevalence of post-traumatic stress disorder and associated factors among individuals living with HIV in Hawassa, Ethiopia, 2018. An institution based cross-sectional study was employed. A total of 205 HIV positive individuals who attend follow-up sessions at HIV clinics were recruited for the study through systematic sampling techniques. The presence of probable post-traumatic stress disorder was assessed by using the post-traumatic stress disorder checklist –5. The potential traumatic life events and any stressful events that occurred in participants' lives were assessed by the life event checklist for DSM-5 (LEC-5). The mean age of the respondents was 32.33 years (SD ±8.67). Prevalence of post-traumatic stress disorder (PTSD) was 46.3%. Being female [AOR = 1.27, (95% CI: 1.01, 3.98)], poor social support [AOR = 1.71, (95% CI: 1.08, 4.45)], poor medication adherence [AOR = 3.87, (95% CI: 1.75, 6.79)], current alcohol use [AOR = 2.34, (95% CI: 1.32, 5.16)], HIV/TB coinfection [AOR = 1.23, (95% CI: 1.09, 6.84)] and having negative life events [AOR = 1.76, (95% CI: 1.41, 6.98)] had statistically significant association with probable post-traumatic stress disorder. The prevalence of post-traumatic stress disorder among HIV positive individuals was high. The researchers highly recommend the integration of psychiatric services to HIV clinics and develop guidelines to screen and treat PTSD among HIV patients. Further research on risk factors of PTSD and longitudinal studies should be conducted to strengthen and broaden the current findings.

Keywords Post trauma stress disorder · Associated factors · HIV · Ethiopia

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Background

Post-traumatic stress disorder (PTSD) is an anxiety disorder that occurs after people encounter frightening, distressing or stressful life events. People with PTSD invariably relive the traumatic event through flashbacks and nightmares and can encounter depression, irritability and feelings of guilty [1]. PTSD can be triggered by an event in which an individual experiences, witnesses or confronts actual or probable loss of life or a serious injury, invoking a response of fear, horror or helplessness [2]. People living with HIV/AIDS are having to deal with these traumatic challenges and recent studies show that PTSD is becoming the most common psychological consequence [3].

HIV/AIDS is one of a group of chronic disease that weakens the immune system of the body, increasing the risk of contracting other life-threatening infections. In 2017, there were 36.9 million people globally living with HIV, with 21.7 million having access to antiretroviral therapy, 1.8 million people becoming newly infected, and 940,000 people dying from AIDS-related illnesses [4, 5].

Recent studies have reported that PTSD is not only caused by specific traumatic events but also can arise after life events [6] and life-threatening conditions such as cancer [7] and HIV/AIDS [8]. The occurrence of a life-threatening illness such as HIV/AIDS can be a traumatic event in itself, or may further compound an ongoing history of trauma, actuating the psychological conditions for PTSD to occur. Past research has shown the rates of PTSD in the HIV-infected population to be much higher than the general population, ranging from 30% to 64% [9, 10].

People with HIV/AIDS would seem vulnerable to PTSD through the trauma of living with the infection and experiencing recurrent, intrusive thoughts or dreams of related complications, illnesses and death. Subsequently, people with HIV/AIDS may try to avoid social contact, activities, and places that serve as reminders of the impact of the illness and its potential outcome, adding further to feelings of isolation, stress and depression [10–12].

People with HIV/AIDS who were also exposed to other traumatic life events are at risk of a faster decline in many areas of biopsychosocial functioning and therefore constitute a particularly vulnerable population. Such HIV/AIDS patients are reported as spending more time confined to bed, encountering debilitating episodes, visiting emergency facilities and experiencing overnight hospitalizations [13, 14].

Although international research into the occurrence of PTSD for HIV/AIDS patients has been ongoing and has shown a faster progression of the disease and related complication, and poor adherence to medication required in reducing mortality, the research in developing countries is minimal. Therefore, this study aimed to assess the prevalence and factors of post-traumatic stress disorder among people living with HIV specifically in South Ethiopia.

Methods

Study Setting and population an institutionally-based cross-sectional study was conducted at Hawassa University Comprehensive Specialized Hospital in southern Ethiopia from October 20 to December 20/2018. Using systematic sampling techniques ($K = 3$), researchers recruited a total of 205 HIV patients from those who attended follow-up sessions for the initiation and refill of medication at the Antiretroviral Therapy (ART) clinic. Among possible participants, those with psychiatric issues hindering communication skill, patients seeking intensive care and those with serious hearing problems were excluded from the study.

Data collection Data was collected through face to face interviews by psychiatry nurses using an interviewer-administered questionnaire. This data measurement tool consists of socio-demographic characteristics, clinical and psychosocial characteristics, and outcome. The presence of probable post-traumatic stress disorder was assessed by using the post-traumatic stress disorder checklist –5. The checklist scale was validated in Zimbabwe among HIV patients with a cut-off score of >33 with sensitivity, and specificity of 74.5% and 70.6% respectively [15]. The test was adapted to the Ethiopian culture and through pretesting proved to be highly reliable, with a Cronbach’s alpha coefficient of reliability score of 0.95. Potentially traumatic life events and any stressful events that occurred in a person’s life was assessed by the life event checklist for DSM-5 (LEC-5). This is a Likert type self-report questionnaire with responses ranging from 0 = ‘not at all’ to 4 = ‘extremely’; thus making the theoretical lowest score 0. The questionnaire helps to assess 16 potentially traumatic life events and was revised in 2007 to correlate the DSM –5 criteria to PTSD [16], and proved reliable in the pretest (Cronbach’s alpha =.88). Perceived HIV stigma and social support were assessed by the HIV stigma scale and Oslo 3–item social support scale, respectively [17–19].

Data Processing and Analyses Endnotes was used for reference and citation management. Epi-Data 3.1 was used for data entry and cleaning. SPSS version 22 was used to analyze the data. The authors ran descriptive statistics to describe the characteristics of study participants and used the Binary Logistic Regression Model to test the presence of an association between posttraumatic stress disorder and independent variables. The strength of association was measured by odds ratios with 95% confidence intervals. Statistical significance was declared at $P < 0.05$.

Results

Socio-Demographic Characteristics of the Study Participants

A total of 205 study participants participated in the survey with the mean (\pm SD) age of 32.23 years (\pm 8.67). The majority of study participants were female 111 (54.1%), married 102 (49.8%), and 97 (47.3%) earned less than 57 USD per month (Table 1).

Clinical and Psychosocial Characteristics of the Study Participants

Among the study participants, 139 (67.8%) had normal BMI range, 89 (43.4%) were currently using alcohol, 190 (92.7%) were on ART and 137 (66.8) perceived they had poor social support (Table 2).

Prevalence of Probable Post-Traumatic Stress Disorder and Associated Factors

The prevalence of posttraumatic stress disorder among the study participants was 46.3%. Binary logistic regression analysis showed that being female, having poor social support, poor drug adherence, current alcohol use, previous history of psychiatric illness, having TB/HIV coinfection and negative life events were factors significantly associated with probable posttraumatic stress disorder (Table 3).

Table 1 Socio-demographic and socio-economic characteristics of the study participants, Hawassa, Ethiopia, 2018

Characteristics	Category	Frequency	Percent (%)
Age	18–24 years	19	9.3
	25–34 years	55	26.8
	35–44 years	64	31.2
	> 45 years	67	32.7
Sex	Male	94	45.9
	Female	111	54.1
Residence	Urban	124	60.5
	Rural	81	39.5
Educational level	No formal education	50	24.4
	Grade 1–8	39	19
	Grade 9–12	52	25.4
	College and above	64	31.2
Marital status	Unmarried	45	22
	Married	102	49.8
	Divorced	22	10.7
	Widowed	36	17.6
Occupation status	House wives	49	23.9
	Civil servants	57	27.8
	Non-government employee	41	20.0
	Merchant	26	12.7
	Unemployed	32	15.6
Average monthly income	< 57 USD	97	47.3
	57–178 USD	32	15.6
	>178 USD	76	37.1

Discussion

The study found the prevalence of probable post-traumatic stress disorder among people living with HIV was 46.3%. The current study findings was in line with studies conducted in Zimbabwe [20], in the USA [21, 22] and in Haiti [23]. On the other hand, this probable prevalence was higher than studies in USA [24–26], in China [27, 28], in Malawi [29], and in South Africa [30, 31]. The variation in probable prevalence could be contributed to the difference in the study setting (institution vs community), post-traumatic stress disorder measurement tool each study used (DSM 5 vs other tools), sample size (small vs large) and socio-cultural differences among the study participants.

Females were 1.27 times more likely to have PTSD when compared to males. This is in comparison with studies in the USA [21, 22, 24–26], in rural China [27] and in South Africa. This could be accountable to differences in neuro-chemistry of the brain in responding to anxiety and highly stressful situation. In addition, many studies have revealed a higher prevalence of PTSD in women than men [32].

Having poor social support was shown in this research to have statistically significant association with PTSD. This is in line with other studies' findings in USA [21] and China [27]. In the case of southern Ethiopia, this might be due to people with HIV/AIDS and PTSD finding it more difficult to adapt themselves to the social environment, communicate or interact with others and employing strategies to avoid interaction with other people and involvement in the community. Due to the psychological impact of PTSD, being diagnosed with HIV might precipitate a person to isolate themselves [33, 34].

Table 2 Clinical and psychosocial characteristics of the study participants, Hawassa, Ethiopia, 2018

Variables	Category	Frequency	Percent %
Duration of the illness	<5 years	67	32.7
	5–10 years	80	39
	≥ 10 years	58	28.3
Body mass index (BMI) Kg/M ²	<18.5	14	6.8
	18.5–24.99	139	67.8
	25–29.99	45	22
	>30	7	3.4
	On ART	Yes	190
	No	15	7.3
ART drug adherence	Poor	62	30.2
	Good	143	69.8
Social support	Poor social support	137	66.8
	Moderate social support	46	22.4
	Strong social support	22	10.7
Current alcohol use	Yes	89	43.4
	No	116	56.6
Current khat (chat) use	Yes	55	26.8
	No	150	73.2
Current cigarette use	Yes	24	11.7
	No	181	88.3
Previous history of mental illness	Yes	35	17.1
	No	170	82.9
Perceived stigma	Yes	73	35.6
	No	132	64.4
Negative life events (LEC/LTE)	Yes	68	33.2
	No	137	66.8
Pervious history of hospital admission	Yes	104	50.7
	No	101	49.3
Co-morbid chronic illness	Tuberculosis	51	24.9
	Diabetes or other	16	7.8
	None	138	67.3
CD4 count level	<200	18	8.8
	200–500	91	44.4
	>500	96	46.8

Those HIV positive individuals with poor drug adherence were more likely to have PTSD. Some studies showed that people with PTSD were more likely to forget to regularly take their medications or avoid taking their medications altogether. In addition, medication poor or non-adherence was shown to have a significant association with PTSD independent of other mental and medical coinfections [35].

This research also showed current alcohol users in southern Ethiopia with HIV/AIDS were 2.34 times more likely to also have PTSD. This is in line with other studies in the USA [22, 25], in Haiti [23] and in South Africa [30]. HIV positive individuals might use alcohol as a coping strategy to deal with HIV, subsequent PTSD symptoms and other related stressful conditions or events in their life. There is a strong possibility that the use alcohol temporarily helps individuals alleviate the flashbacks and re-experience of health-related fears.

The statistical analysis also showed that Tuberculosis (TB)/HIV co-infected individuals were 1.23 times more likely to have PTSD. This finding is in agreement with other studies based in South Africa [35]. This might be due to the fear that having TB/HIV coinfection might precipitate the development of multiple drugs –resistant TB (MDR-TB) which is generally understood to be a life-threatening condition [36].

Table 3 Factors associated with PTSD among study participants, Hawassa, Ethiopia, 2018

Characteristics		PTSD		COR (95% CI)	AOR (95% CI)
		Yes	No		
Sex	Male	37	57	1	1
	Female	58	53	1.68, (1.34, 3.32)	1.27, (1.01, 3.98)**
Social support	Poor	78	59	2.11, (1.64, 5.34)	1.71, (1.08, 4.45)*
	Moderate	12	34	0.76, (0.27, 3.52)	0.94, (0.12, 5.73)
	Strong	7	15	1	1
Previous hospital admission	Yes	40	64	1.41, (1.04, 5.33)	1.01, (0.81, 3.38)
	No	31	70	1	1
Drug adherence	Poor	32	30	6.56, (3.57, 8.97)	3.87, (1.75, 6.79)*
	Good	20	123	1	1
Current alcohol use	Yes	54	35	3.43, (2.30, 6.28)	2.34, (1.32, 5.16)*
	No	36	80	1	1
Current cigarette use	Yes	15	9	2.10, (1.92, 5.69)	1.10, (0.73, 5.69)
	No	80	101	1	1
Previous history of mental illness	Yes	11	24	1.16, (1.02, 7.64)	0.89, (0.47, 4.84)
	No	48	122	1	1
Co-morbid medical illness	Tuberculosis	29	22	1.87, (1.65, 7.65)	1.23, (1.09, 6.84)**
	Diabetes or other	7	9	1.11, (1.01, 9.89)	0.87, (0.63, 5.66)
	None	57	81	1	1
Negative life events (LEC/LTE)	Yes	40	28	2.13, (2.01, 9.89)	1.76, (1.41, 6.98)**
	No	55	82	1	1

* Significant association (p value < 0.05) **- significant association (p value < 0.01), 1=reference group

Having negative life events were also shown to have had a significant association with the development of PTSD in HIV positive individuals. This is in agreement with other studies' findings [25–34] that identifies individuals who had previously lived through negative life or traumatic events are prone to develop the symptoms of PTSD [13, 14].

Conclusion

The prevalence of post-traumatic stress disorder among HIV positive individuals was shown in this research to be high in southern Ethiopia. Being female, having poor social support, poor drug adherence, current alcohol use, HIV/TB co-infection and having negative life events had statistically significant association with Posttraumatic stress disorder. As a significant outcome of this research, the researchers highly recommend the integration of psychiatric services to HIV clinics in Ethiopia, and the development of socially and culturally appropriate guidelines to screen and treat PTSD among HIV patients.

Limitation of the Study

Although the posttraumatic stress disorder checklist –5 was adapted to the Ethiopian culture through pretesting, the life event checklist for DSM-5 (LEC-5) had not been validated to the local Ethiopian context. This may have over or under estimated the probable prevalence of PTSD. Further research on risk factors of PTSD and longitudinal studies should be conducted to strengthen and broaden the current findings.

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Authors' Contributions BD conceived the study and was involved in the study design, reviewed the article, analysis, report writing and drafted the manuscript. AT & YA was involved in the study design and proposal development. PK has edited the manuscript for English language readability and proof reading. All authors read and approved the final manuscript.

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Availability of Data and Materials All relevant data are within the paper.

Compliance with Ethical Standards

Ethical Approval and Consent to Participate Ethical clearance for this study was obtained from the Research and Ethics Review Committee of College of Medicine and Health Sciences, Hawassa University. Study participants were informed about their rights to interrupt the interview at any time and written informed consent was obtained from each study participants. Confidentiality was maintained at all levels of the study. HIV positive subjects who were found to have severe posttraumatic stress disorder were referred to psychiatry clinics for further investigations.

Consent for Publication Not applicable.

Competing Interests The authors declare that they have no competing interests.

Abbreviations *PTSD*, Post traumatic stress disorder; *LEC*, Life events checklist

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