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RESEARCH ARTICLE

Post-Traumatic Stress Disorder and Associated Factors Among Traumatic Patients Attended in Four Government Hospitals, West Ethiopia

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Abstract:

Background:

Posttraumatic Stress Disorder is exposure to actual or threatened death that leads to negative alterations in cognitions and mood, and marked change in arousal and reactivity. The disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning. Patients' quality of life decreases in almost every dimension after severe trauma.

Objective:

This study aims to assess the prevalence of post-traumatic stress disorder and its associated factors among fifteen years and above aged patients with traumatic history for more than one month who attended four government hospitals in East Wollega Zone, West Ethiopia.

Methods:

An institutional based cross-sectional study was employed using an interviewer-administered questionnaire. Post-trauma stress disorder symptoms scale was employed to assess the prevalence of post-trauma stress disorder and its associated factors among fifteen years and above aged patients. Study populations were those who had a history of a traumatic injury and attended four government hospitals in East Wollega Zone, West Ethiopia, for more than one month. Study participants were, consecutively, recruited from January to February 2018.

Results:

One hundred ninety-three traumatic patients participated in this study. Male participants accounted for 119 (61.7%) and 82 (42.5%) of respondents aged between 15-26 years. The prevalence of Posttraumatic Stress Disorder in this study was 33 (17.1%). Female traumatic patients were 2.727 times more likely to develop post-traumatic stress disorder than male respondents (AOR= 2.727, 95% CI: 0.431-4.227). Similarly, participants who were found to be involved in substance abuse were 1.65 times (AOR= 1.65, 95% CI: 0.926-2.782) more likely to develop post-traumatic stress disorder than their counterparts. Also, daily laborers were 4.05 times (AOR= 4.05, 95% CI: 0.89-8.76) more likely to develop post-traumatic stress disorder than government employees.

Conclusion:

The prevalence of post-traumatic stress disorder, in this study, was 17.1%. Psychological counseling services offered to female patients, daily laborers, and substance abusers can benefit them as they were significantly associated with the post-traumatic stress disorder.

Keywords: Patients, Posttraumatic, Prevalence, Public hospitals, Stress disorder, Trauma.

Article History

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1. INTRODUCTION

Post-traumatic Stress Disorder (PTSD) is exposure to actual or threatened death that leads to negative alterations in cognitions and mood and marked changes in arousal and reactivity.

The disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning. However, the problem is not attributable to the physiological effects of a substance and medical condition [1].

Participants exposed to traumatic events had high rates of psychopathology for a major depressive episode, conduct disorder, and alcohol dependence. Risk events range from self-

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harm, suicide attempt, violent offenses, and functional impairment. Participants with lifetime PTSD had even higher rates of psychopathology problems. However, only one-fifth of victims with PTSD received help from mental health professionals [2]. Besides, PTSD patients have a high incidence of suicide and significant behavioral change that will lead to loss of productivity, loss of more lives, and more family disruptions [3]. Individuals' quality of life decreases in almost every dimension after severe trauma. They suffer from impairments that include persisting pain, functional deficits, mental and socio-economic deficits when compared with the general population [4 - 6].

The prevalence of PTSD varies across the world based on the type of trauma [7 - 9]. Findings indicate that substance users are more likely to report a traumatic event, more symptoms, events, and are more likely to meet diagnostic criteria for PTSD [10, 11]. The traumatic injury was common among the Ethiopian population [12, 13]. More than half of the trauma patients visit emergency departments in Ethiopia because of physical damage [13]. Even though they may not experience trauma, 18.4% of the mental health workers serving in a tertiary mental health institute met the criteria for PTSD [14].

A study reveals that multiple factors can affect PTSD. Factors like being female, history of a traumatic event, family history of mental illness, personal past mental illness, lower education, low income, presence of comorbid mental illnesses, trauma intensity, eye witnessing to deaths, lack of social support, unemployment after the event, persistent physical problems following the road traffic accidents and damage to property like house were shared risk factors for PTSD [8, 12, 15, 16]

A study conducted among Prisoners of Nekemte town correctional center in Nekemte town determined the prevalence of PTSD in a prison population, and it was 31% [17]. However, there are a limited number of studies conducted among traumatic patients admitted to and treated in the outpatient department of hospitals. Therefore, this study assesses the prevalence of post-traumatic stress disorder and its associated factors among fifteen years and above aged patients with traumatic history for more than one month who attended four government hospitals in East Wollega Zone, West Ethiopia from January to February 2018

2. PATIENTS AND METHODS

2.1. Study Area and Period

The study was conducted among trauma patients of four governmental hospitals of East Wollega Zone, West Ethiopia, namely: - Arjo District Hospital, Nekemte Referral Hospital, Sire District Hospital, and Wollega University Referral Hospital, from January to February 2018

2.2. Study Design

The institutional-based cross-sectional study design was employed.

2.3. Study Population

All traumatic patients aged fifteen years and above with traumatic history for more than one month who were visiting the selected government hospitals and present during the time of data collection were eligible for the study.

2.4. Eligibility Criteria

All trauma patients, who aged fifteen years and above with traumatic history for more than one month who visited the selected hospitals and gave consent, were included in the study. The first 30 days, after the traumatic events have happened, were excluded because it might be acute stress disorder rather than the post-traumatic stress disorder. Additionally, traumatic patients, who were unable to speak and unconscious during data collection, were also excluded from the study.

2.5. Sample Size Determination and Sampling Procedure

The study participants' charts were reviewed to identify the register date of traumatic events. All patients with traumatic history for more than one month and aged fifteen years and above who visited the four selected hospitals during the study period, and those who gave written consent to participate in the study, were consecutively recruited. Accordingly, two hundred four traumatic patients were assumed to participate in the study. However, only 193 traumatic patients gave written consent and participated.

2.6. Ethical Consideration

For this study, ethical clearance was approved by the Ethical Review Board of Wollega University, Institute of Health sciences. Formal letters were written to four government hospitals to get permission to conduct the study. Participation in this study was voluntary and written consent was obtained from study subjects before data collection. Written consent for under eighteen years old participants was received from their parents.

2.7. Data Collection Tools and Procedure

Data was collected using semi-structured questionnaires after reviewing the literature, based on socio-demographic characteristics, clinical aspects, and personal factors. Data on the prevalence of post-traumatic stress disorder were collected through interviews using the standard PTSD Checklist-Civilian Version (PCL-C) questionnaire [18]. It has a total of 17-items and measures the type and frequency of PTSD symptoms. The PCL scales have 5-point [1 - 5] Likert scales ranging from 1 (not at all) to 5 (extremely). Respondents rate each item from 1 ("not at all") to 5 ("extremely") to indicate the degree to which they have been bothered by that particular symptom over the past month. Thus, the total possible scores range from 17 to 85. The total score of more than or equal to 44 is considered to be the cut-off point for a probable PTSD diagnosis after an individual item score summation.

Before the actual data collection started, patients recording chart in Orthopaedics and emergency unit was reviewed in four governmental hospitals of Nekemte town. By criteria, the patients were noticed for any physical injury secondary to

traumatic events. The mechanical trauma events, which were known to potentially cause impairment to physical integrity, were taken as one of the considerations for the selection of the trauma patients.

2.8. Data Quality Control and Management

The quality of the collected data, which is based on the generalization of the findings, was monitored through all data collection instruments. The questionnaire, first prepared in the English language, was then translated into Afan Oromo and then back-translated into English to check its consistency by language experts. Pre-testing of the data collection tool was made on 12 traumatic patients at Gimbi General Hospital to check the validity of the questionnaires. Based on the results of pre-testing, the necessary adjustment was made to the data collection instruments.

2.9. Data Analysis

Data was entered and analyzed using the Statistical Package for Social Sciences version 21 software. The logistic regression model was used to check the association between dependent and independent variables. Variables with a p-value of less than 0.05 were considered statistically significant to the prevalence of post-traumatic stress disorder.

2.10. Operational Definition

2.10.1. Traumatic Patients

Any patient with traumatic injuries that range from small lesions to life-threatening multi-organ injury.

2.10.2. Chat Chewing

Any person who chews Khat (*Catha edulis*), a flowering plant native to the Horn of Africa, which contains the alkaloid cathinone, a stimulant, which is said to cause excitement, loss of appetite, and euphoria.

3. RESULTS

3.1. Socio-demographic Characteristics of the Respondents

Two hundred four trauma patients were assumed to be the participants of this study. However, only 193 traumatic patients responded with a response rate of 94.61%. Of the total of 193 patients, one hundred nineteen (61.7%) were male participants. Respondents' age group between 15-26 years accounted for 82 (42.5%) of traumatic patients. One hundred seventeen (60.6%) respondents were married, and 64 (33.2%) participants attended their education at the level of college and above. Ninety-one (47.2%) of the respondents were orthodox religious followers. Fifty-seven (29.5%) respondents were government employees. Oromo ethnic group accounted for 163 (84.5%) of participants (Table 1).

3.2. Prevalence of Post-traumatic Stress Disorder, Nature of Trauma and Personality Dimensions

In this study, 33 (17.1%) of respondents developed post-traumatic stress disorders. The majority of the respondents, 127 (65.8%) were victims of a road accident, while 66 (34.2%) of

participants were victims of other traumatic events. Among all study respondents, 170 (88.08%) of them were getting support from their family members, while 23 (11.92%) of them were getting supports from a member of their religious group. Of all study participants, 50 (25.91%) of them were alcohol abusers, and 56 (29%) of the respondents were Khat chewers (Table 2).

Table 1. Socio-Demographic characteristics of respondents in east wollega government hospitals, Western Ethiopia, January to February 2018 (n=193).

Variables		Frequency	Percent
Sex	Male	119	61.7
	Female	74	38.3
Marital status	Married	117	60.6
	Single	69	35.8
	Widowed	2	1.0
	Divorced	5	2.6
Age	15-26years	82	42.5
	27-40years	54	28.0
	41-55years	42	21.8
	>55years	15	7.8
Educational status	Never attend school	42	21.8
	Basic education	18	9.3
	Primary education	39	20.2
	Secondary education	30	15.5
	College and above	64	33.2
Religion	Orthodox	91	47.2
	Protestant	63	32.8
	Muslim	39	20.2
Occupational status	Government employee	57	29.5
	House wife	19	9.84
	Farmer	49	25.40
	Merchant	32	16.58
	Daily labor	36	18.65
Ethnicity	Oromo	163	84.5
	Amhara	23	11.9
	Gurage	3	1.55
	Tigre	4	2.07

Table 2. Prevalence of posttraumatic stress disorder and characteristics of respondents' in East Wollega zone government hospitals, Western Ethiopia, 2018 (n=193).

Variables		Frequency	Percent
Source of support	Religious group member	23	11.92
	Family member	170	88.08
Type of traumas	Road traffic accident	127	65.80
	Fighting related	24	12.43
	Falling related	30	15.54
	Gynecology and obstetrics related	12	6.22
Substance abuse	Alcohol abuse	50	25.91
	Chat chewing	56	29.01
	Others*	4	2.07
Posttraumatic stress disorder	Present	33	17.10
	Not Present	160	82.90

*Cigarette smoking, use cannabis.

Table 3. Factors associated to Posttraumatic stress disorders among traumatic patients in East Wollega zone government hospitals, western Ethiopia, January to February, 2018 (n=193).

Variables	PTSD		Univariate analysis		Multivariable analysis	
	Present	Not present	P-value	COR (95%CI)	P-value	AOR (95%CI)
Age in years						
15-26years	15	67	0.28	3.67(1.2451-6.276)	-	-
27-40years	10	44	0.270	1.43(0.875-3.36)	-	-
41-55years	4	38	0.67	2.52(0.89-6.34)	-	-
>55years	4	11	1.0	1.0	-	-
Sex						
Male	19	100	1.0	1.0	1.0	1.0
Female	14	60	0.022	1.62 (0.491-3.79)	0.024	2.727(0.431-4.227)
Occupation						
Government employee	8	49	1.0	1.0	1.0	1.0
House wife	5	14	0.08	0.92(0.42-1.58)	0.21	0.95(0.32-1.71)
Farmer	4	45	0.103	1.15(0.08-2.70)	0.65	0.85(0.33-1.69)
Merchant	2	30	0.385	1.63(0.74-4.31)	0.98	0.92(0.48-1.98)
Daily labor	14	22	0.041	2.35(0.98-5.59)	0.038	4.05 (0.89-8.76)
Marital status						
Married	22	95	1.0	1.0	-	-
Others	11	65	0.34	0.99(0.84-1.56)	-	-
Substance abuse						
Yes	28	82	0.020	1.80(1.096-2.958)	0.004	1.65(0.926-2.782)
No	5	78	1.0	1.0	1.0	1.0

3.3. Factors Associated to Posttraumatic Stress Disorder

According to Univariate logistic regression analysis, variables like female sex, daily laborer, and substance abusers were associated significantly with post-traumatic stress disorder.

The result of multivariate logistic regression analysis models also showed that female traumatic patients were 2.727 times more likely to develop post-traumatic stress disorder than male respondents (AOR= 2.727, 95% CI: 0.431-4.227). Similarly, participants with substance abuse history were 1.65 times (AOR= 1.65, 95% CI: 0.926-2.782) more likely to develop post-traumatic stress disorder than their non-substance using counterparts. Besides, casual laborers were 4.05 times (AOR= 4.05, 95% CI: 0.89-8.76) more likely to develop post-traumatic stress disorder than government employees (Table 3).

4. DISCUSSION

This study assessed the prevalence of post-traumatic stress disorder and its associated factors among fifteen years and above aged patients with traumatic history for more than one month who attended four government hospitals in East Wollega Zone, Oromia, West Ethiopia. In this study, the prevalence of post-traumatic stress disorder is 33 (17.1%) among respondents. This prevalence report is higher when compared to studies conducted in China and Nigeria [15, 19]. However, the current finding is nearly similar to a study conducted in Addis Ababa, Ethiopia, and Botswana [12, 14, 20]. However, it is lower as compared to the prevalence of posttraumatic stress disorder in Nigeria among people who experienced road traffic accidents [16]. The reason suggested for this difference could be due to differences in the socio-

demographic background of the study participants and study design differences. This study focused on posttraumatic stress sufferers among hospital admitted patients, while the Nigerian study was conducted in a community setting. Community-based study participants could have a better opportunity to self-report about PTSD than health facility-based study participants. In addition, studies have shown that the educational background mitigates victims in developing PTSD. However, in this study, 51% of the participants had a lower educational background up to the primary level.

Our observed values are also lower than a study conducted in India where 30% of patients were found to have post-traumatic stress disorder [21]. The variation occurred may be due to differences in study participants since our study assessed all traumatic patients while the Indian study included only orthopedic injuries attended to in the orthopedic outpatient department.

In this study, substance abuse of patients before the occurrence of traumatic events was found to be significantly associated with the risk of developing PTSD. This finding is in line with a study conducted in the Netherlands, where patients with substance use disorder were a substantial and vulnerable subgroup to develop PTSD [11]. Similarly, traumatic patients who were casual workers were significantly associated with the risk of developing PTSD. This finding was contrary to a study conducted in Nigeria [7]. These differences can occur because of the variety of study participants' occupations. In our study, greater than half of the respondents were non-employees. However, in the case of the Nigerian study, more than half of the respondents were non-government or government employees.

In addition, the prevalence of PTSD was found to have a significant association with socio-demographic factors like gender and occupation, which is in line with both studies conducted in India and Nigeria where gender had a significant association with the prevalence of PTSD [16, 21]. Female traumatic patients were more likely to experience PTSD than males, which were supported by the results of a study done in Nigeria [16]. However, this finding is not in line with a study conducted in Nigeria where socio-demographic variables such as age, sex, and occupation did not have any statistically significant relationships with PTSD [7].

4.1. Limitation of the Study

Even though the study was conducted in four government hospitals, it includes all traumatic patients regardless of injury source. This may influence the result since the severity and magnitude of trauma may vary between victims. In addition, the time of data collection may bring bias as injury patterns have been shown to vary seasonally.

CONCLUSION

The prevalence of post-traumatic stress disorder, in this study, was 17.1%. Psychological counselling services offered to female patients, daily laborers, and substance abusers can benefit them as they were significantly associated with post-traumatic stress disorder.

LIST OF ABBREVIATIONS

PCL-C	=	PTSD Checklist-Civilian Version
PTSD	=	Posttraumatic Stress Disorder

AUTHORS' CONTRIBUTIONS

EAG conceived and designed the study; extracted, analysed, and interpreted the data. BGL, GFM, and MGD supervised the whole research, guided the conception and design of the study, and assisted with the interpretation of data and manuscript preparation. All authors read and approved the final manuscript.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

Ethical clearance was approved by the Ethical Review Board of Wollega University, Institute of Health sciences, Ethiopia.

HUMAN AND ANIMAL RIGHTS

Not applicable.

CONSENT FOR PUBLICATION

Participation in this study was voluntary and written consent was obtained from study subjects before data collection.

AVAILABILITY OF DATA AND MATERIALS

The datasets used, and/ analyzed during the current study are with the Principal investigator and can be provided on reasonable request.

FUNDING

None.

CONFLICT OF INTEREST

The author declares no conflict of interest, financial or otherwise.

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