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Research Article

Prevalence of Postpartum Post-Traumatic Stress Disorder and Associated Factors Among Postnatal Mothers in Public Hospitals of Harari Region, Eastern Ethiopia 2024

Abstract

Background: Postpartum post-traumatic stress disorder, which has serious health consequences for the mother, child, and other family members, can result from the traumatic experience of giving birth, which up to one-third of women worldwide report having. Despite the tragic health effects, little is known about this issue in the study area.

Objectives: The objective of this study was to assess the prevalence of postpartum post-traumatic stress disorder and associated factors among postnatal mothers a t public Hospitals, in Harari region, East Ethiopia 2024.

Methods: Institutional based cross-sectional study design was conducted from May 8 to June 22 2024 on 407 postnatal mothers in Harari Region at two Hospitals. Systematic Random Sampling technique was used to select study participants. Structured and Interview- administered questionnaire was used for data collection. After ensuring completeness of each and every questionnaire, the collected data was labeled and entered in to EpiData version 3.1. Software then exported to SPSS version 26 for analysis. Descriptive statistics was computed to describe the study variables. To identify factors associated with post-traumatic stress disorder, bivariate and multivariable logistic regression model was fitted. CI with 95% reported and statistical significance was declared at $p< 0.05$

Result: PTSD was present in 11.5% of people overall. The following factors were significantly linked with PTSD at a value < 0.05: having depression (AOR=1.94(1.25, 3.0), anxiety (AOR=1.8, 95%CI, 1.04, 3.1), life-threatening incidents (AOR=1.28, 95% CI, 1.08, 2.63), and having poor social support (AOR=2.11, 95% CI, (0.43, 2.76).

Conclusion and Recommendation: According to the study, PTSD was quite common at public Hospital in Harar region after childbirth. PTSD was statistically connected with depression, anxiety, and a lack of social support. It is therefore advised to support organizations that focus on mental health, conduct routine evaluations of patients who have experienced trauma during childbirth, and provide resources to assist women in their postpartum period.

Keywords: Post-Traumatic Stress Disorder, Childbirth, Postpartum, Childbirth-Trauma.

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Introduction

Background: Giving birth is typically seen as one of the most significant life milestones for parents and is a deeply transforming experience that affects a woman's social, emotional, and physical well-being in almost every way (1). Stress is characterized as an adaptive or non-adaptive response to a change in the environment. The inability to recover after witnessing or experiencing a terrible event is a hallmark of post-traumatic stress disorder (PTSD) [2]. A significant portion of mothers encounter mental health problems, even if the vast majority of them are able to adapt to their new situation [3]. One of the issues that frequently arises following labor in the context of a traumatic birth and other unpleasant childbirth-related experiences is Postpartum Post-Traumatic Stress Disorder (PPTSD). The term "Post-Traumatic Stress Disorder" (PTSD) is a chronic mental condition that describes the intricate behavioral, emotional, cognitive, and physical effects of psychological trauma which develops when there is an insufficient adaptation to deal with a traumatic event [4]. Though traumatic experiences can happen in a variety of situations, including childbirth, it was first thought to be a syndrome mostly affecting veterans of war [5-7]. In DSM-5, post-traumatic stress disorder is defined according to 8 criteria that include exposure to a traumatic or stressful event, intrusive symptoms, avoidance of trauma-related stimuli, negative thoughts and feelings and trauma-related arousal and reactivity, for a duration of at least one month. To diagnose PTSD at least one intrusion symptom, three avoidance symptoms, and two hyper arousal symptoms should be present. Postpartum post-traumatic stress disorder is a special condition that follows the perception of childbirth as a traumatic event [8]. Traumatic birth includes births, whether preterm or full term, which are physically traumatic (for

example, instrumental or assisted deliveries or emergency caesarean sections, severe perianal tears, postpartum hemorrhage) and births that are experienced as traumatic, even when the delivery is obstetrically straightforward," according to the National Institute for Health and Care Excellence (NICE), which defined traumatic birth as a criterion "A" qualifying event for PTSD in women [11]. Therefore, postpartum women experience PTSD following a stressful birthing experience [8]. After going through a severe and extremely traumatic event (such as being abused physically or sexually, being in a violent conflict, or losing a relative), a person may develop post-traumatic stress disorder, or PTSD [9]. Postpartum adjustment disorders and mental health illnesses may occasionally be linked to the events surrounding childbirth. An emerging body of research indicates that some birth-related situations can cause some women to acquire post-traumatic stress disorder (PTSD) following child birth [10]. The primary risk factors for postpartum PTSD development were obstetric interventions and obstetric violence. Another significant risk factor is women who have experienced mental illness in the past. Low social support that women may have had during their pregnancies and the actual birth experience is the primary social factor promoting the development of postpartum depression after childbirth [4,11,12].

Statement of the problem: Worldwide, estimates of the prevalence of postpartum PTSD in the community sample ranged from 3.1% to 24.5% (13,14). Postpartum PTSD is a major health issue that affects both high- and low-income nations. Estimates range from 3.4% to 20.7% in developed nations [15-17] and from 3.6% to 28.57% in low-income nations [16-18]. An estimated 6.6 million mothers worldwide experience posttraumatic stress disorder connected to childbirth each year, contributing significantly to the global illness burden [19]. Post-Traumatic Stress Disorder (PTSD) affects 4% of women after giving birth and up to 18% of women in high-risk categories [5]. With 5.11 million births in Europe in 2018, it's possible that up to 1.5 million women experienced less than ideal birth experiences, and more than 200,000 of them may have suffered from PTSD as a result [11]. and also 157,000 women in the USA are likely to be affected every year [20]. There are numerous effects of the maternal postpartum mental health issue, especially if it is unknown and mistreated [21]. PPTSD and other mental health disorders cause one in five people to live with a disability worldwide, resulting in over $1 trillion in annual economic losses, early mortality of 10–20 years, and a high rate of suicide deaths (almost 800,000 fatalities annually). Perinatal PTSD symptoms also result in adverse perinatal (mother–infant) outcomes including postpartum depression and/or anxiety, perceived difficult pregnancy, and low birth weight [22-23], impaired mother-infant bonding, low breastfeeding rates, an adverse effect on child development, and long-term somatic and psychiatric morbidity [24]. This condition can prevent mothers from realizing their full potential, lowers quality of life and raises financial burdens [4], preventing them from working efficiently, making it difficult for them to handle everyday stressors, resulting in unfavorable birth outcomes, and negatively affecting their children's cognitive development, nutritional status, and early wellbeing [32]. In addition to this Intergenerational transmission of vulnerability to trauma observed in other populations [5].

Postpartum PTSD increases parenting stress and negatively affects children's social-emotional development. Furthermore, following maternal postpartum stress disorder, 26% of the infants had a moderate risk of developmental delay and 9% of the children had a high risk [25]. Research indicated that women with postpartum PTSD experienced fear of childbirth during their subsequent pregnancies, which impacted their pregnancy experiences and may have an impact on the development of the fetus [26]. It was suggested that P-PTSD detection and treatment are critical to the health of mothers and newborns [27]. The problem was found to be affected by several factors, like lack of social support, stressful events, partner violence, parity, mode of delivery, anxiety, depression and medical complications [17]. WHO guidelines on mother and newborn care for a pleasant postnatal experience emphasis the need of screening, diagnosing, and treating Perinatal Mental Health (PMH) disorders in Maternity and Child Health (MCH) services [28]. According to reports on maternal mental health in Africa, the continent needs to reconsider its approach to maternal mental health in order to build a model for future public health emergencies, and maternal mental health needs to be given priority in order to meet the Sustainable Development Goals of the UN by 2030 [29]. Research has shown that Post-Traumatic Stress Disorder is often more common in postpartum women than in veterans, despite the common perception that PTSD is primarily associated with military combat [5]. Postpartum PTSD is underdiagnosed and undertreated, despite research showing that it is becoming more prevalent and comparable to the prevalence of postpartum depression and anxiety [30]. Although the issue is growing and has many effects, health workers and researchers in developing nations tend to ignore it [31]. The fact that most psychological and emotional therapy provided by child health care agencies does not even address postpartum PTSD suggests that many mothers are left without the help they need [32] and can cause women to suffer in silence if they do not receive the proper support and recognition [39]. Despite women are at a high risk of developing Post-Traumatic Stress Disorder (PTSD) after giving birth, it's a neglected issue, especially in low-income nations due to particular difficulties that women encounter in these kinds of environments, such as stigma associated with mental health, cultural standards, and restricted access to social support and healthcare [4]. There is minimal information available in Ethiopia about Postpartum PTSD following childbirth, despite the fact that it significantly affects the mental health of mothers, infants, and family members. Hence, evidence on postpartum PTSD is required for effective healthcare planning and management

and for setting priorities to reduce the burden of PTSD [12]. Therefore, the purpose of this study was to find out Prevalence of postpartum PPTSD among postnatal mothers and risk factors at public Hospitals in Harari region, East Ethiopia 2024.

Significance of the study: This study generates information on prevalence of post-traumatic stress disorder following childbirth and ascertain existing significant factors associated with it. Such information is important for designing, implementing and monitoring of mental health problem which are crucial to prevent burden of health consequences of post-traumatic stress disorder among postpartum women. The potential users of this study outcome include institutions or organizations who are interested in women's mental health. These are regional, zonal or woreda level health offices and non-governmental organizations. The study findings could further benefit for future researchers who are interested in the area. And also, since there is no baseline survey related to postpartum' post-traumatic stress disorder in the area, this study will also provide baseline information to undertake further study on large scale.

Literature Review

Prevalence of post-traumatic stress disorder: Globally, the prevalence of PTSD is 3.9%, with delayed-onset PTSD accounting for 5.6% of cases, whereas prevalence rates at approximately 6 weeks postpartum ranged from 2.8 to 5.6% [4]. Research indicates that anywhere from 9% to 44% of women may consider their childbirth to have been traumatic, depending on the specific circumstances of the event [41]. In addition, studies indicate that between 3.1% and 43% of women may experience postpartum post-traumatic stress disorder [42,43]. Another study reported the prevalence of PTSD after caesarean section was 9·0% at more than 8 weeks postpartum, and 4·8% at 4 weeks to more than 12 months postpartum [44]. PTSD was evaluated in most postpartum studies in relation to childbirth, with a mean prevalence of 4.0% in community samples. PTSD was more common in women in high-risk categories, with a prevalence of 18.5% following delivery [42]. A study carried out in Iran, however, indicates that among postpartum women, the prevalence of traumatic childbirth was 48.3%, and the total prevalence of post-traumatic stress disorder was 29.1% [45]. The prevalence of post-traumatic stress disorder was 42.9% among women who gave birth during the Covid-19 epidemic in Italy, according to a cross-sectional survey in high-volume obstetric/gynecological medical Centre [46]. A prospective study following childbirth in Canadian women shows a PTSD 7.6% of incidence. Conversely, a six-month cross-sectional study carried out in field clinics in a semi-urban area of Sri Lanka revealed a 3.6% prevalence of postpartum PTSD [47]. According to a study conducted in Germany, 2.9% of mothers experienced PTSD following childbirth [3]. On the other hand, a retrospective case–control study was undertaken in Germany shows about 30–44% of women experience a stressful up to a traumatic childbirth and 1–3% develop a PTSD following emergency cesarean section [48]. In a tertiary hospital in Switzerland, a prospective cohort study on women undergoing C-sections and followed up for six weeks after the procedure revealed a PTSD prevalence of 2.7%. According to a prospective, observational study done in France, the prevalence of post-traumatic stress disorder (PTSD) was 5.7% one year following vaginal delivery (49). A cross-sectional study conducted in Iran revealed that 47.7% of women experienced PTSD after giving birth. Longitudinal study conducted in Northshoa Amhara region revealed Prevalence for posttraumatic stress disorder was found to be 9.7 at 6th week of postpartum [50].

Risk factors of Post-Traumatic Stress Disorder: Postpartum PTSD has been associated with a number of factors, including prenatal depression and anxiety, a history of psychiatric issues prior to pregnancy, a history of sexual trauma, childhood sexual abuse, intimate partner violence, psychosocial traits, younger age at the time of the trauma, lower social economic status, lack of social support, fear of labor, traumatic birth experiences, complications during pregnancy or childbirth, and dissociation during childbirth [35,51]. Research has indicated that sociodemographic factors impact PTSD. Specifically, lower socioeconomic status, as indicated by parameters such as income, employment status, educational attainment, and poverty level in the neighborhood, is linked to more severe symptoms of PTSD [52]. Patients with a history of previous traumas, mental health problems, and adverse psychosocial profiles are high risk for developing PTSD following childbirth [51]. Another study found that fear of childbirth, dissociative experiences during caesarean delivery and postpartum complications, history of sexual trauma and anxiety were the characteristics that determined the presence of PTSD [9].

Birth Experience: Experiencing a caesarean delivery, or an emergency delivery are the most influential risk factors in triggering PTSD after childbirth [53]. The feeling of fear of delivery is one of the major risk factors for developing PTSD after childbirth [54].

Psychological Conditions: Following childbirth, women with a diagnosis of a mental illness and those who experience depression and/or anxiety during pregnancy are more likely to experience post-traumatic stress disorder [55].

Social Risk Factors: The development of postpartum PTSD is favorably influenced by the absence of maternal social support throughout pregnancy and/or during childbirth [56]. The experience of a lifetime traumatic event is also a social factor that could influence the occurrence of PTSD after birth [54,55]. The likelihood of experiencing

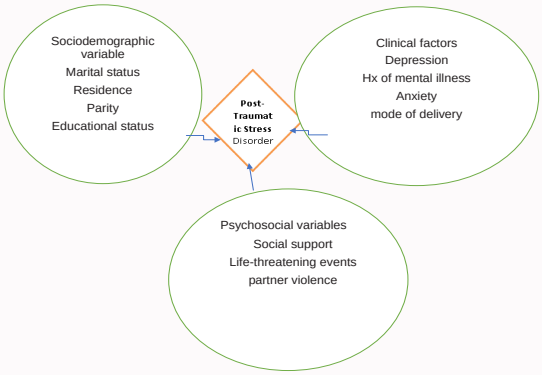

Figure 1: Conceptual framework on the associated factor of PTSD among post-partum women, East Ethiopia 2024 (3,4,12,47,48,54,57,60,62).

trauma from any kind of sexual violence is substantially higher [54]. Having more specific sociodemographic characteristic like being unmarried adds another element of risk [57]. Although there is still a lack of research on domestic/partner violence and its connection to postpartum PTSD, Oliveira et al.'s study found that the frequency of at least one episode of both psychological and physical intimate partner violence during pregnancy was 71.95% and 21.2%, respectively. In addition, 30.2% of women who experienced postpartum PTSD reported having experienced childhood sexual abuse, and 92.5% and 45.0% of them had experienced physical and/or psychological abuse from their partners during pregnancy [58]. In a cross-sectional study carried out in Spain, risk factors for PTSD were elective caesarean delivery, emergency caesarean section, verbal obstetric violence, and psycho-affective obstetric violence [59]. An observational study conducted in France found that prior abortion and prior postpartum hemorrhage were related with a higher risk of Post-Traumatic Stress Disorder (PTSD) [49]. Postpartum depression and verbal abuse during labor were shown to be strongly linked with postpartum PTSD, according to a six-month cross-sectional study conducted in field clinics in a semi-urban area of Sri Lanka [47]. Furthermore, a cross-sectional study conducted online revealed a strong correlation between mothers perceived social support after giving birth, psychological, traumatic, and birth-related risk factors, and the possibility of postpartum PTSD [60]. Longitudinal study among postpartum women in Northwest Ethiopia shows perceived traumatic childbirth, fear of childbirth, depression, anxiety, psychological violence, women with cesarean section/ instrumental delivery, stressful life events of health risky, relational problems and income instability were found to be associated factors of PTSD [61].

Conceptual Framework on Post-Traumatic Stress Disorder: This study used a comprehensive conceptual framework developed to visualize the concept of studies regarding post-traumatic stress disorder. The arrows in the diagram show interactions between the variables and PTSD. As depicted in the diagram PTSD associated with socio demographic, clinical factors, social factors and psychological conditions (Figure 1).

Objectives of the Study

General Objectives of the study:

- To assess the prevalence of post-traumatic stress disorder following childbirth and associated factors among postpartum women in public hospitals of Harari region, East Ethiopia, 2024

Specific Objectives:

- To determine the magnitude of post- traumatic stress disorder among postpartum women in public hospitals of Harari region, East Ethiopia, 2024
- To identify factors associated with post -traumatic stress disorder among postpartum women in public hospitals of Harari region, East Ethiopia, 2024

Methods and Materials

Study Area and period: The study was conducted at two hospitals of Harari region May 8 to June 22 2024: Jugula Hospital and Hiwot Fana Hospital and both of which provide full maternal delivery services, including operational delivery. The capital of Harari region is Harar which is located at 525 km East of Addis Ababa the capital city of Ethiopia. According to the population projection of Ethiopia by 2022, Harari region estimated to be 276,000 Based on the 2022 population projection and of whom 139,000 were men and 137,000 women. This region is the only one in Ethiopia where the majority of its population lives in an urban area: 99,368 or 54.18% of the population are urban inhabitants. In Harari region, there are two government hospitals, one of which is a

general hospital and one is specialized hospital. HFSUH is one of the oldest hospitals in Harar, established during the Italian occupation (1928–1933). In the recent decades, the hospital has become a teaching facility for health sciences students at Haramaya University. It has a total of 233 beds, with an average of 11 957 admissions per year. The maternity unit offers about 5808 deliveries annually and provides 830 caesarean deliveries annually. Jugala General Hospital was built in 1957 by King Haile Selassie I in memory of his father. The maternity unit has six prenatal beds, two delivery couches, one newborn resuscitation bed and eight postnatal beds. In this unit, on average, 3000 deliveries are conducted annually [63].

Study design: An institutional based cross sectional study design was conducted.

Population

Source Population: The study included all postnatal mothers who were in the first year after childbirth and attending MHC and EPI at two Hospitals in Harari region.

Study population: All postnatal mothers in the first year after childbirth at the selected Hospitals in Harari Region during the data collection period were included.

Exclusion and Inclusion Criteria

Inclusion Criteria: A postnatal mother who attend EPI for their child and MCH Clinic and in their first year following childbirth were included in this study.

Exclusion Criteria: Mothers who were in their first month after giving birth, and mothers who were critically ill and unable to communicate were excluded.

Sample Size Determination

Sample size determination for first objective: Sample size is determined by using single population proportion formula with the assumption 9.7% prevalence of PTSD from study conducted in northwest Ethiopia [61], 1.96 Z (standard normal distribution). By using 95%, Confidence Interval (CI) and margin of error 3%, the formula for calculating the sample size (n) is:

$n= (Z\alpha/2)2\ p\ (1-p)/d2$

Where:

n = Sample

z = critical value 1.96

p =assumed prevalence of PTSD assumed getting from previous study done in Ethiopia at Northwest Ethiopia in postpartum women was 9.7 %

d = precision (marginal error) = 0.03

q=1-p

So, the minimum sample size was:

n= n = (1.96^2 * 0.097 * (1 - 0.097)) / 0.03^2

N ≈ =374

Including 10% of non-response rate, 374+38=412

Sample size determination for second objective

The sample size for specific objective of the study was determined using EPI-Info version 7.2.6.0 statistical software (Epi info/StatCalc), based on the following assumptions: 80% power, 95% confidence interval, and 1:1 ratio of cases and controls, which was taken from the previous study [40], cated to each hospital. k=850/412=2.

Table 3: Sampling procedure 4.6 Sampling procedure

There are one federal police, two public and two private hospitals, eight health centers (four urban and four rural), 19 health posts, 10 non-profit clinics in the Harari region. Two of the public hospitals are Hiwot fana specialized university hospital and Jugal hospital. Hiwot fana specialized university hospital is a teaching hospital of Haramaya University. Concerning sampling procedure, two hospitals from Harari regional state are identified for this study. Since there are only two public hospitals in this area, both of them were included in the study and the determined sample size was proportionately allocated to the public hospitals based on the last year total number of postnatal mothers attending MCH clinic and EPI at each public hospital. Systematic Random Sampling technique was used to select study participants from postnatal mothers attending postpartum visit at MCH Clinic and EPI

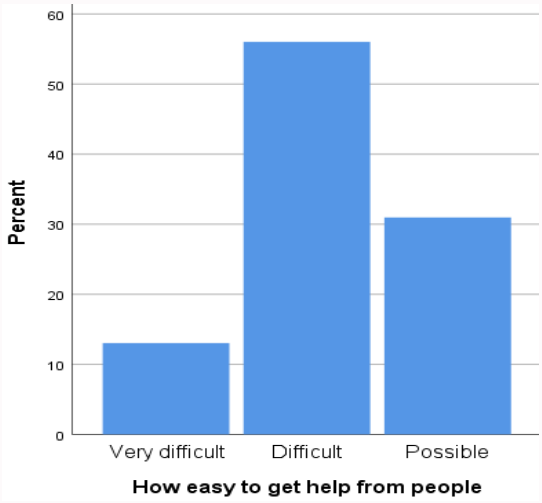

Figure 2: Description of social support among women in public hospitals in Harar region, East Ethiopia, 2024 (n=407).

for their child during the study period. All of them were listed according to their respective MRN or child MRN. Accordingly, 850 women identified. Sample size was proportionally allowed.

Data Collection Tools and Procedures

A structured, interviewer-administered data collection tool was used for this study. The questionnaires have had questions about socio-demographic factors, obstetrics, social support, and intimate partner violence, stressful life events, History of mental illness, depression, anxiety and questions assessing PTSD symptoms. The PCL was used to assess PTSD which is an easily administered self-report rating scale for assessing the 24 DSM-V symptoms of PTSD. The short version of depression, and anxiety questionnaire was used to measure depression, and anxiety. The Oslo 3-items social support scale with scores ranging from 3 to 14 was used to measure social support. The Wijma Delivery Expectation/Experience Questionnaire (W-DEQ) was used to measure fear of child birth [66]. Life-Threatening Experiences (LTE) questionnaire is frequently used to assess stressful events with yes/no answers of respondents. All tools were validated and reliability was checked in different countries and also used in Ethiopia. The data collectors explained the objectives of the study to be participated in by reading the consent sheet aloud in Afan Oromo language. Then, data was collected by face-to-face interview with the participants. Data collection was overseen by the supervisors on a daily basis.

Study variables

Dependent variable: Post Traumatic Stress Disorder.

Independent variables:

Socio-demographic variables: Educational status, marital status.

Obstetric variables: Mode of delivery

Social and behavioral factors: Social support, partner violence.

Factors related to the traumatic event: Life threatening events.

Clinical factors: Previous history of mental illness, Family history of mental illness.

Operational definitions

Posttraumatic Stress Disorder: Post-traumatic stress disorder: was measured by using 24 items of PCL- 5 which ranges (0-80). The cutoff–point, ≥ 33 is considered to have PTSD and score. Therefore, a score of ≥ 33 is considered to have symptoms of PTSD for this study. The cut-offs for the instrument are validated by a previous study in Ethiopia [6].

Depression and Anxiety: The short version of depression and anxiety questionnaire was used to measure depression and anxiety. Participants were asked to indicate the presence of symptoms in each domain over the past week scoring from 0 (did not apply at all) to 3 (applied most of the time). Scores from each dimension are summed. Accordingly, for participants with depression, a depression score of 0–9 is considered normal, and a score ≥ 10 considered for a mother to have a symptom of depression. For participants with anxiety, an anxiety score of 0– 7 is considered normal, and a cut-off score of ≥ 8 is considered to have symptoms of anxiety for this study. This

instrument is also validated and used previously in Ethiopia [67].

Social Support: The Oslo 3-items social support scale with scores ranging from 3 to 14 was used to measure social support. The social support scores were categorized into no social support for scores less than nine. Scores between 9 and 14 is considered strong support "yes" for social support. The Oslo 3-items social support scale was validated and previously used in Ethiopia [6,68-69].

Fear of child birth: The Wijma Delivery Expectation/Experience Questionnaire (W-DEQ) was used to measure fear of child birth. The W-DEQ has been designed specially to measure fear of child birth (FOC) operationalized by the cognitive appraisal of the delivery. This 33-item rating scale has a 6-point Likert scale as a response format, ranging from ' not at all' (= 0) to ' extremely' (= 5), yielding a score-range between 0 and 165. The W-DEQ was validated and previously used in Ethiopia and its internal consistency and split-half reliability was checked with the Cornbrash's alpha score of 0.932 [66]. A score of ≥ 85 is considered to have fear of child birth for this study [66,70-71].

Stressful life events: The List of Threatening Experiences (LTE) was used to measure experience of stressful life events during the six months period [72]. The 12 items are categorized into five categories namely health risks, loss of a loved one, relationship difficulties, income instability and legal problems. The List of Threatening Experiences (LTE-12) has been used in a population level study in Ethiopia [73,74].

Partner Violence: Partner violence was measured by the WHO (2005) multi country study questionnaire. This questionnaire has four items for psychological violence, six items for physical violence and three items for sexual violence. In this study, the prevalence of domestic violence was defined as any violence whether physical, psychological and sexual or any combination of the three, regardless of the relationship status.

Data quality Assurance

To assure quality of data, a pretest was done in Harar General Hospital, which is found Harar town, on a sample of 42 (10% of the sample) mothers to check any ambiguities and difficulty. The internal consistency of the tool was checked, and it has Cronbach's a test for the outcome variable PPTSD at 0.926. five BSc data collectors and two MSc supervisors were selected from psychiatry profession and training was given for data collectors and supervisors by the principal investigator about data collection methods and tools was discussed. Psychiatric professionals translated a questionnaire to Afan Oromo and pretest was conducted for clarity of questionnaires two weeks prior to actual data collection to make an amendment. Regular supervision by the supervisors and principal investigator was made to ensure that all necessary data were properly collected. Data was cleaned and checked for completeness and then the collected data was processed promptly and entered from a paper into computer.

Data processing and analysis

Data was checked for completeness then coded, entered into Epi-data version 3.1 then exported to SPSS version 26. Data was cleaned, coded, and entered into the EpiData version 3.1software. Then, it was exported to the Statistical Package for Social Sciences (SPSS) version 26 software for further analysis. Descriptive statistics such as mean, standard deviation, and percentage were determined. The association between the outcome variable, postpartum posttraumatic stress disorder, and each independent variable was seen in the binary logistic regression model. A multi-co-linearity test was done using co-linearity statistics among the independent variables. In the second step, independent variables with a p-value Association between dependent and independent variables was assessed and its strength presented using adjusted odds ratios and 95% confidence intervals. Data presented by using numbers, frequency, table and figures. Descriptive statistical analysis used to estimate the frequencies and percentages of the variables. To determine the association of independent variables with PTSD, bivariable and multivariable logistic regression analysis was carried out. Variables with p-value ≤0.25 was taken to multivariable analysis and variables with p-value less than 0.05 was judged associated with PTSD. Model fitness was checked (Hosmer and Lemeshow Test).

Ethical considerations

Ethical clearance was obtained from the institutional review board (IRB) of Salale University. Permission was also obtained from respective health institutions. A written informed consent for mothers was obtained. Confidentiality of the data was assured by using codes, passwords and limiting access to the data only for the investigator. Privacy of the respondents was maintained during the interview by using a private room or the place where people are not around for the data collection. There was no risk to the women who decide not to participate in the study, they received the same standard of care as those who participate in the study.

Results

Sociodemographic characteristics of the respondents

From 412 postpartum mothers, 407 participants were included in the study with a response rate of 98.8%. The

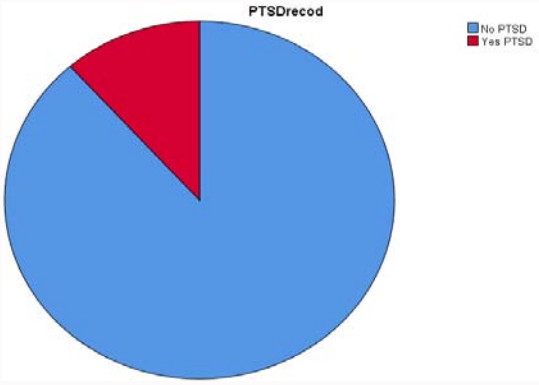

Figure 3: Description of prevalence of post-traumatic stress disorder (PTSD) among postpartum women at public hospitals in Harar region, East Ethiopia, 2024.

Table 1: List of Abbreviations/ Acronyms.

Abbreviation	Full Form
DSM-5	Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition
EPI	Expanded Program on Immunization
LTE	List of Threatening Experiences
MMH	Maternal Mental Health
NICU	Neonatal Intensive Care Unit
PCL-5	Posttraumatic Stress Disorder Checklist for DSM-5
PTSD	Posttraumatic Stress Disorder
TES	Traumatic Event Scale
W-DEQ	Wijma Delivery Expectation/Experience Questionnaire

Table 2: Sample size calculation for factors associated with PTSD among postnatal mothers at two public Hospitals in Harari region, Eastern Ethiopia, 2024.

Variables	Assumptions used	AOR	Total sample size
Perceived traumatic childbirth	%unexposed=33%, %exposed=53%	AOR=2.3	208
Fear of childbirth	%unexposed=26% %exposed=46%	AOR=2.5	188
Stressful life events	%unexposed=34% %exposed=55%	AOR=2.4	188

Table 3: Sampling Procedure.

Hiwot Fana Comprehensive and Specialized Referral Hospital			Jugula General Hospital	
MCH clinic	**EPI service**		**MCH clinic**	**EPI service**
108	345		80	317
51	163		37	156
453/850=53.2%*412=219			397/850=46.7%*412=193	
Participants=214			Participants=193	

mean age of the respondents was 25.28 years with SD ±5.205 years. The majority of the respondents were urban 69.5%, in marital union 96.0%, Oromo in ethnicity 74.5%. 13.8% of women can't read and write. More than half, 55.5% of participants were housewife and 10.8% merchant (see Table 2).

Psychosocial factors: 13% of respondents said it is very difficult to get practical help from friends. Moreover 31% of respondents said it is possible to get practical help from friends.

On social support, 88(21.6%) had poor social support and 319(78.4%) had a strong social support (see Figure 2).

Factors Associated with Post-Traumatic Stress Disorder (PTSD) among postnatal mothers, at public hospitals of Harari region, East Ethiopia, 2024.

In Bivariable logistic regression analysis variables like Family history of mental illness, partner violence,

Table 4: Socio-Demographic characteristics among postpartum women at public hospitals in Harari region, East Ethiopia, 2024 (n=407).

Variable	Category	Frequency n=407	Percentage (%)
Age	18-24	154	37.8
	25-37	253	62.2
Residence	Urban	283	60.5
	Rural	124	30.5
Ethnicity	Oromo	307	74.50%
	Amhara	20	4.90%
	Hadare	67	16.50%
Religion	Muslim	285	70
	Orthodox Protestant	71	17.4
		51	12.6
Marital status	Married	407	100%
Educational status	Can't read and write	56	13.8
	Primary school	237	58.2
	Secondary and above	114	28
Occupational status	Housewife	226	55.5
	Gov't employee	137	33.3
	Merchant	44	10.8

Table 5: Partner violence characteristics among postpartum women at public hospitals in Harari region, East Ethiopia, 2024 (n=407).

Variables	Category	Frequency	Percent
Emotional violence	Yes	189	46.4
	No	218	53.6
Physical violence	Yes	330	81.1
	No	77	18.9
Sexual violence	Yes	11	2.7
	No	396	97.3

Table 6: Clinical and Psychosocial factors of the postpartum women at public hospitals in Harar region, Eastern Ethiopia, 2024(n=407).

Clinical factors	Category	Frequency	Percent
Family history of mental illness	Yes	69	17
	No	338	83
Depression	No	310	76.2
	Yes	97	23.8
Anxiety	No	207	50.8
	Yes	200	49.2

life-threatening events, Fear of childbirth, Mode of delivery, parity, poor social support, depression and anxiety had p-value of less than 0.25 and these variables fulfilled the minimum requirements for further analysis in multivariable logistic regression analysis. In multivariable logistic regression analysis, factors having a poor level of social support, Life treating events, depression and anxiety were statically significant for Post-Traumatic Stress Disorder (PTSD) with p-value less than 0.05. A statistical test for multi-collinearity was applied between independent variables in multivariable logistic regression and the variable inflation factor was also checked for each variable and is in the range of 1.07 to 1.93. The model fitness was tested by the Hosmer-Lemeshow test and its significance test was 0.52. Four variables were significantly associated with Post-Traumatic Stress Disorder in multiple logistic regressions: life-threatening events (AOR=1.28, (1.08, 2.63), anxiety (AOR=1.8, (1.04, 3.1)), depression (AOR=, 1.94(1.25, 3.0) and poor social support (AOR=2.11, (0.43, 2.76)).

Discussion

The study quantifies that, the prevalence of Post-Traumatic Stress Disorder (PTSD) was 11.5% among selected postpartum women at Haramaya teaching hospitals. The odds of developing Post-Traumatic Stress Disorder were

Table 7: Factors and Post-Traumatic Stress Disorder (PTSD) among postpartum women in public hospitals in Harari region (n=407).

Variable	Category	PTSD Yes/No		COR(95%CI)	AOR(95%CI)	P-value
Educational status	Can't read & write	11	45	2.16(0.92, 3.74)	1.91(1.23, 6.87)	0.215
	Primary school	24	213	2.07(1.68, 5.38)	1.28(1.03, 5.61)	0.091
	Secondary and above	12	102	1	1	
Occupational	House wife	35	191	1.09(0.55, 1.59)	0.59(0.30, 1.14)	0.115
status	Government emp.	12	125	0.83(0.44, 1.57)	0.77(0.46, 2.05)	0.927
	Private	1	43	1	1	
Parity	Para one	13	199	3.23(1.65, 6.33)	0.63(0.46, 2.19)	0.988
	Multiparous	34	161	1	1	
Having Depression	Yes	22	75	3.34(1.78, 6.25)	1.94(1.25, 3.7)	.003**
	No	25	285	1	1	
Anxiety	Yes	35	165	3.45(2.25, 5.37)	1.8(1.04, 3.1)	.036*
	No	12	195	1	1	
Partner violence	Yes	34	246	1.21(1.07, 8.49)	0.97(0.35, 2.73)	0.955
	No	13	114	1	1	
Hx of mental illness	Yes	12	57	1.82(1.06, 8.76)	1.66(1.24, 5.69)	.112*
	No	35	303	1	1	
Fear of childbirth	Yes	44	307	2.53(0.75, 8.45)	2.04(1.22, 3.43)	0.207
	No	3	53	1	1	
Life threatening event	Yes	34	235	1.39(1.18, 3.45)	1.28(1.08, 2.63)	.021*
	No	13	125	1	1	
Social support	Poor	21	67	2.46(0.54, 3.10)	2.11(1.43, 2.76)	.007**
	Strong	36	283	1	1	

1.28 times higher among participants with life-threatening events, 1.8 times in participants with anxiety, 1.94 higher in participants having depression as compared to their counterparts, and those with poor social support have an odd of more than twofold times higher for developing PTSD. The prevalence of this study goes in line with the previous studies conducted following the childbirth, Northwest Ethiopia 9.7% [40], and in France 13% [75], in USA 9 % [9], Brazil 9.4 % [76], In South India 9.5% [77], in Spain 12.7 % [78]. While comparing, the result of this study was lower than other studies conducted in Iran 29.1%, south Africa 20% [79], Italy 42.9%, other part of Iran 47.7% and other parts of South India 17.7%, The possible justification could be, variation in the study period, and natural disaster. These studies include during covid-19 in Italy, but in a study conducted in south India participants were before covid-19 era and in Iran after covid-19, Also different socioeconomic status and cultures. Another variation might be due to the difference in sampling technique, assessment tool, study design, the time gap from a traumatic event to the study. Existing geographical and socio-cultural variations also contribute for the differences. Participants with poor social support had 2.11 times higher odds to develop PTSD as compared to those with strong social support. This finding also goes along with other studies conducted in semi-urban area of Sri Lanka [47], online survey [60], Switzerland [57] and Northshoa [61], Addis Ababa, Ethiopia. This is possibly due to the fact that poor mental health might result from traumatic injury and peoples with strong social support allows people to express their worries, feel secure, and have a sense of belonging, social networks and strong social support systems may be able to lessen the impact of stressful life events. Participants with anxiety were 1.8 times higher odds of developing PTSD as compared with others didn't have, as supported by other studies [34], Iran [62,82], even if, casual relation between anxiety and PTSD couldn't concluded, comorbid cases of anxiety disorders make persons more vulnerable to develop PTSD. Additionally, it was discovered that anxiety symptoms could independently predict PTS [46]. The odds PTSD was 1.94 as high among respondents with depression as supported by studies conducted in Italy [12], Canada [83] and United State [9]. Even though, the direction of causality between PTSD and depression is obscure, the onset of depression is associated with preexisting vulnerabilities and subsequent psychosocial stressors, whereas the onset of PTSD is associated with stressors related to traumatic childbirth [10]. Individuals with existing exposure to childbirth traumas might not seek or get psychological or psychiatric support over time, which could cause or exacerbate the depression and lead to comorbidity. Participants who had life-threatening events were 1.28 times as likely to have PTSD, it was supported by studies done in Nigeria [84], Greek [85] and Brazil [45], and this is due to their chance of exposure

to hardship in life in some extent and perception of subsequent life-threatening events and impact on emotional well-being of victim's family members.

Limitations of the Study

The utilization of items that needs remembering of previous events in the questionnaire may invite recall bias. The cross-sectional nature of this study was its main limitation. Hence, studies were only able to report associations rather than definitive temporal or causal relationships between Post-Traumatic Stress Disorder (PTSD) and its associated factors like depression and anxiety, poor social support and obstetric complications, and life-threatening events.

Conclusion and Recommendations

Conclusion: According to this study, more than 11.5% of individuals acquire Post-Traumatic Stress Disorder (PTSD), indicating that psychological and mental health crises are common following childbirth. Particularly, those who experience obstetric problems, life-threatening events, depression, anxiety, and a lack of social support were all strongly linked to PTSD.

Recommendations: Immediate, integrated, and multisector involvement by the government, families, hospitals, and other relevant entities is crucial since post-traumatic stress disorder has a significant negative impact on public health and causes suffering.

To Health sectors in Harar Region: According to the study, PTSD was very common in the area. As such, the hospital should provide postpartum women with the care and resources they need.

For health professionals: To give due emphasis in asking patients for previous history of exposure to childbirth trauma and assessed for complete symptoms of post-traumatic stress disorder on diagnosed and new patients as their routine clinical evaluation. To provide a strong attention to patients diagnosed with depression and anxiety, obstetric complications, because of higher chance of co-morbidity with post-traumatic stress disorder. Establishing a referral system with health centers to link suspected patients immediately to Hospital is recommended.

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