ADDIS ABABA UNIVERSITY

COLLEGE OF HEALTH SCIENCES

SCHOOL OF ALLIED HEALTH SCIENCES

DEPARTMENT OF NURSING AND MIDWIFERY

PREVALENCE AND ASSOCIATED FACTORS OF POSTPARTUM DEPRESSION AMONG MOTHERS ATTENDING PUBLIC HEALTH CENTERS OF ADDIS ABABA, ETHIOPIA, 2016.

BY: ADDISHIWET FANTAHUN (BSC.)

A RESEARCH THESIS SUBMITTED TO ADDIS ABABA UNIVERSITY, COLLEGE OF HEALTH SCIENCE, SCHOOL OF ALLIED HEALTH SCIENCES, DEPARTMENT OF NURSING AND MIDWIFERY IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR MASTERS DEGREE SPECIALIZED IN MATERNITY AND REPRODUCTIVE HEALTH

MAY, 2016

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A PROPOSAL SUBMITTED TO ADDIS ABABA UNIVERSITY COLLEGE OF HEALTH SCIENCES, SCHOOL OF ALLIED HEALTH SCIENCES, DEPARTMENT OF NURSING AND MIDWIFERY IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTERS OF SCIENCE IN MATERNITY AND REPRODUTIVE HEALTH.

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THIS THESIS BY ADDISHIWET FANTAHUN (BSC)IS ACCEPTED IN ITS PRESENT FORM BY THE BOARD OF EXAMINERS AS STISFYING THESIS REQUIREMENT FOR THE DEGREE OF MASTER IN MATERNITY AND REPRODUCTIVE HEALTH.

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ABSTRACT

Background: Mental health problems in mothers can lead to increased maternal mortality and morbidity. Postpartum depression (PPD) explains a various groups of depressive symptoms and syndromes that take place during the first year following birth. **Objective:** To assess the prevalence and associated factors of postpartum depression among mothers attending public health centers of Addis Ababa, Ethiopia, March 2016 –April 2016. **Methods:** Facility based cross sectional study design was conducted among 633postpartum women. Simple random sampling technique was used to select four sub cities from the 10 sub cities of Addis Ababa. Secondly, 10 Health centers were selected by a lottery method. The numbers of women included in the study were determined using proportion to size allocation technique. Then the study participants from each health center were selected by simple random sampling. The Edinburgh Postnatal Depression Scale (EPDS) was used at a cutoff point ≥13 to detect depression. Descriptive statistics and logistic regression were used. **Result:** 144(23.3%) of participants had postpartum depression .Those respondents who had previous history of postpartum depression [AOR=4.41(95% C.I: 2.4-8.3)], domestic violence [AOR=3.1 (95% C.I: 1.6-5.9)], and unplanned pregnancy [AOR=3.0 (95% C.I: 1.7-5.2)] had a higher odds of postpartum depression compared to their counterparts. Unmarried [AOR=2.8(CI: 1.4-5.4)], who had problem in income, [AOR=2.3 (95% C.I: 1.3-4.0)], who had previous history of child death [AOR=3.5(95% C.I: 1.4-8.8)] and who used substance during pregnancy [AOR=4.9(95% C.I: 1.1-21.3)] were more likely to be depressed. Dissatisfaction in marriage [AOR=2.9(95% C.I: 1.5-5.6)] and delivery without the presence of any relatives in the health facility [AOR=3.5(95% C.I: 1.5-8.0)] had association with postpartum depression. **Conclusion and Recommendations:** Postpartum depression is a common mental health problem at the postpartum period. By revealing the prevalence and factors that determine postpartum depression this study recommended interventions like Integration of mental health service with existing maternal health care and Inter sector collaboration between women's affair and health institutions to prevent Postpartum depression in Addis Ababa Public Health Centers.

Key words: - Depression, Maternal mental health and Postpartum Depression

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CHAPTER 1: INTRODUCTION

1.1 .Background

Postpartum depression (PPD) explains a various groups of depressive symptoms and syndromes that take place during the first year following birth(1). Postpartum period is a critical time where different sever mood disorders occur, The familiar forms are baby blues, postpartum depression and postpartum psychosis(2). It can lead to increased maternal mortality, both through adversely affecting physical health needs as well as more directly through suicide(3).

Postpartum depression often differentiated into major and minor depression that starts within 4 weeks of childbirth(1). It can be described by different sign and symptoms like failure of interest ,low self-worth, feeling of tiredness , sadness, disturbed sleep or appetite (4) , problem in concentrating and making decision, thought that life is not worth living , having negative thought about the baby and feeling of guilt and shame(5).

In view of the fact that the exact pathogenesis of PPD is unknown so studies regarding hormonal variability in the postpartum period and function of thyroid dysfunction in PPD and hypothalamic-pituitary-thyroid axis are under investigation(1).

Globally it is anticipated that 350 million individuals suffer from depression(4).From those women are the principal vulnerable group than men(1). It becomes the primary reason of disability. The problem claimed the lives of women from developed and developing countries, Every year 10% to 20% of new mothers are affected with this problem, related to that several women and their child are suffering in unfavorable condition(1).

Nowadays healthcare providers are using different tools which are reasonable, easy to use and reliable to asses women's for postpartum depression. By doing this 50% of women's with the clinical symptoms during pregnancy and postpartum period are easily recognized(3).

A good number of researches have been done in developed countries like Canada(6), Japan(7) and united states of America(8), somewhat fair facts from developing countries including Ethiopia is found (9). It has been studied in more than 90% of high income countries (HICs) compared with just 10% of low and middle income countries as sited by (10).

1.2. Statement of the problem

Mental health problems are severe problems that can affect the thought, feeling and perceptions of a person. Among mental health problems postpartum depression is the major global maternal mental health problem which leads to greater maternal mortality rate related with suicide(4). It's also reported that an average of 8-19% of women's are having frequent postpartum depression symptoms (1, 4).

Globally, about 10% and 13% of pregnant women and who just gave birth respectively are suffering from mental health problems .In developing countries it is more higher 15.5% through pregnancy and 19.8% after child birth(4). Studies show that the prevalence of postpartum depression is 9.2% in Sudan (11), 28.8% in Pakistan(12) , 43% in Uganda(13), 31.7% in south Africa (14) and 56% and 34% during pregnancy and after childbirth respectively in Jamaica(15). On the other hand reports show that self reported postpartum depression in 17 U.S states ranged from 11.7% to 20.4%(16) ,and 8.4% and 8.6% in Canada for minor and major mental disorders (6).

In severe cases mothers may commit suicide due to that children's growth, mother-infant attachment and breast feeding will be negatively affected. but treating this disorder helps to tackle this troubles in addition it will help to reduce malnutrition and diarrhea of children's (4).

Basically, almost all women are vulnerable for mental health problems during pregnancy and after childbirth in the first year but there are major factors which leads women for postpartum depression (4). This include poverty(1, 4, 17),substance use (47), unintended pregnancy(12, 18),low social support(1, 4),low educational level(19-21), stress full life events and traumatic experience (8, 22),domestic violence (12), previous psychiatric illness(1, 23) ,unemployment(21, 24) , poor husband support(25) and losing a baby or having an infant who is hospitalized (16).

According to National mental health strategy of Ethiopia (26), integration of Mental Health into Primary Health Care (PHC) will help to prevent, early identify and , provide treatment and management at each level of care.

The provision of care will vary depending on the socio-demographic and cultural factors so it will be difficult to conclude the prevalence and associated risk factors of PPD at worldwide. Despite its massive effects especially in low and lower income countries (LLICs) it is inadequately understood by women and clinicians. Even though multiple studies have been conducted in Ethiopia concerning postpartum cares the focus has always been on PNC or family planning services while the prevalence and associated factors of PPD gained little attention. It is important to get an insight and plan for the implementation strategies to prevent and early identify women at the postpartum period. Therefore, the present study aims at assessing the prevalence and associated factors of postpartum depression among mothers attending public health centers of Addis Ababa.

1.3. Rational of the study

Early identifying maternal mental health problems and associated factors are potentially an effective strategy for decreasing maternal mortality and morbidity related to mental health problems. So early screening for postpartum depression would improve the ability to recognize these disorders and hence necessitate enhanced care that ensures appropriate clinical outcomes. Postpartum Women's represent a key population of interest for identifying the magnitude of the problem. That may act as a high burden due to disability and mortality. Which also leads to increased coast of medical care, improper child care, discontinuation of breast feeding, and dysfunction in early brain development of child? Beside it constitute largely unrecognized barriers to achieving the millennium development goal (MDGs). Taking this into consideration, this study will be conduct to identify the prevalence of post partum depression and its associated factors which will help in the design and implementation of postnatal mental health assessment intervention in all child bearing women.

The evidence from this study will assist policy makers and program planners to take action to reduce morbidity and mortality related with postpartum depression, So that they can take appropriate measure which is suitable for our country.

Secondly it will provide relevant information to midwives, nurses and other health care providers on the magnitude and associated factors of postpartum depression which will make them to

- Provide intensive professionally based postpartum support.
- Remain alert for risk factors associated with postpartum depression.
- Implement psychosocial intervention during the prenatal period and continue throughout postpartum period.

In addition to that the communities will gain a better insight about the factors that may cause postpartum depression in postpartum women.

Lastly it also helps other researchers use this research's findings as a stepping stone for additional research on the same topic.

CHAPTER 2: LITERATURE REVIEW

The postnatal period is well established as an increased time of risk for the development of serious mood disorders. Which can range from transient " blue" immediately following child birth to an episode of major depression and even sever, incapacitating, psychotic depression. Each of which differs in its prevalence, clinical presentation, and management. Women experience depression twice the rate of men. These 2:1 ratios exist regardless of racial or ethnic ground or economical status. The problem occurs in 10-15% of women's after childbirth(27).

2.1. Prevalence of postpartum depression

Worldwide 450 million peoples are seriously affected with neurological and mental illness from that depression is the fourth principal cause of disability and premature deaths. It's also predicted that by the year 2020 it will become the second leading cause of disability in the world(28) . Mental health problems during pregnancy and postpartum period continues to affect the welfare of mothers ,their babies, partners and family members(29). But in contradict to that, major focus to reduce maternal morbidity and mortality has been given to direct causes of adverse pregnancy outcomes than mental health (5).

A study which was conducted in 2009 showed that 10% of women developed depression during pregnancy and from the general population 15-20% of women developed postpartum depression out of that 50% were expected to re-experience the episode in the following pregnancy and approximately 30% of women will experience it with a history of depression(28).

As the NSDUH (national survey on drug use and health) report in Canada about 1 out of 10 women (8% of pregnant women and 11% of non pregnant women of reproductive age) had at least one major depressive episode in the past year of data collection from 2005-2009(30). In the 2009 WHO global review of literature 10-15% of women in industrialized countries experienced non psychotic clinical depression in the year after giving birth. Most of them experienced this health problem in the first five weeks of postpartum period. The rate of postpartum depression was higher in developing nonin which 15.6% of women developed during pregnancy and 19.8% after child birth (5).According to CDC report in 2012 the global estimation of postpartum

depression ranges from 5%-25% but the procedural discrepancy with the studies formulate the real prevalence rate unclear(5).

A literature review carried out from 2005-2014 shows that a prevalence of PPD ranging from 1.9% to 82.1% in developing countries and 5.2% to 74.0% in developed countries. In the same study it was mentioned that Finland was the country which bares the minimum prevalence rate of postpartum depression which was 0.1% (6). Considering the prevalence of PPD on continent basis in Maryland ,Germen, Canada and Greenland had a prevalence of 14% , 6.1%, 8.46% (minor/major) and 8.69 %(major) and 8.6% respectively (6, 31, 32).

Latin American countries brazil and Portugal, bears 7.2% and 17.6% correspondingly (33, 34). A study conducted in Korea on the prevalence and associated factors of PPD indicated 40.5% to 61.4% of PPD from prenatal to postnatal periods (24).Similar studies done in different cultures from 1991-2008 mentioned a prevalence of 0.5%-60% globally and state prevalence of PPD from 3.5% to 63.3%.In Malaysia and Pakistan respectively (35). Further studies which were conducted in Asian countries like china , Japan ,Iran and India represents 27.3%, 7.7%, 34.8% and 31.4% successively(7, 17, 19, 36). A cross sectional study in 2010-2011 held in Qatar on the prevalence of psychiatric disorder and associated risk factors in women's during their postpartum period results confirm the prevalence to be 18.6% (37).Comparable results were introduced regarding the prevalence of PPD in other Mediterranean countries like Saudi 33.2%(38) and Lebanon 33.3% in the first 2 consecutive days and 12.8% within 30-40 days after delivery (39).Looking at a prospective study on the socio demographic and clinical features of PPD among Turkish women in 2008 PPD was responsible for about 15.4% of all depressive mental disorders(40). According to the 2010 prospective study on prevalence and risk factors of PPD in Al-Dakhlyia government in Oman the problem was studied at two different times which are at the first two weeks and eight weeks after delivery and it has been mentioned to be 13.5% and 10.6% respectively(41). In sub Saharan countries the problem is also getting an attention for example in 2010-2011 a community based study in prenatal screening for PPD was conducted in south Africa and related with it the prevalence was known to be 31.7%(14), according to a study which was conducted by the year 2013-2014 in Sudan the prevalence was 9.2% (11), in other sub-Saharan countries like Jamaica and Uganda the prevalence was as high as 34%(15) and 43% (13) respectively .

According to the Ethiopian national mental health strategy in the year 2012/13 - 2015/16 Conducted by Federal Democratic Republic of Ethiopia Ministry of Health (FMOH) mental illness is the leading non-communicable disorder in terms of burden. Indeed, in a predominantly rural area of Ethiopia, mental illness comprised 11% of the total burden of disease, with schizophrenia and depression included in the top ten most burdens. The prevalence for general depression is 5.0% and more than one in ten pregnant women, and one in 20 postnatal women in Ethiopia suffer from undetected depression (26). In a cross-sectional study among 393 pregnant women attending antenatal care service in Addis Ababa public health centers, the prevalence of antenatal depression was 24.9 %(42). Further studies which were conducted in Ethiopia (43, 44) mentioned 32.8% and 31.5% of study participants respectively were depressed.

2.2. Determinant of postpartum depression

Factors associated with postpartum depression as outlined in literatures include certain Socio-demographic characteristics, Social support, Obstetrics factors and previous psychiatric history which in most literatures considered as associated factors.

2.2.1. Socio-demographic characteristics

The incidence of postpartum depression is affected by different contributing factors. Among these sociodemographic characteristics is one of the leading factors for PPD. This has been revealed by different studies. Young mothers were found to be at increased risk of PPD than mothers of older age(21, 33, 37, 41, 45).In contrast, a cross sectional study which was conducted in Japanese women revealed that the prevalence of PPD was higher in older women than younger(36). Beside that a study in Saudi Arabia tells the absence of association between PPD and maternal age (38).There is also evidences on the difference in the incidence of PPD between educated and non educated mothers with the higher prevalence of PPD in uneducated (19, 21, 45, 46). But this result is in opposite with other findings where educational status of the mother did not associate with PPD (38).Another cross sectional study in Qatar tells women who are educated are more vulnerable for the problem(37). Single mothers appear to have greater risk of

postpartum depression (15, 47).Women who are in low economical status are also at high risk for PPD(17, 19, 24, 25, 36, 37, 48).Socio cultural factor rituals is among the list of factor which contributed for the incidence of PPD(35).Comparatively mothers who are unemployed are more at risk to develop PPD than employed(21, 24, 46). In different researches it has been mentioned that mothers who are working are also affected with the problem (17, 37).But this result is in converse to other findings where occupational status of the mother did not have any association with the problem(38).

2.2.2. Social support

Women who have poor husband support were found to be at increased risk of postpartum depression(6, 13, 23, 25), This was evident in different studies. On the study which was conducted in 2010-2011on 285 women who gave birth in the Department of Obstetrics, Gynecology and Gynecologic Oncology at the University Hospital in Bydgoszcz it has been mentioned that the child birth with out the presence of any relatives was mentioned as a foctor for PPD and concluded that there was no association between the lack of social support and the incidence of postpartum depression (22). Marital problem was a contributing factor for maternal depression (13, 45).Unsatsfactory relation ship with mother in law was also thought to be additional risk factor for PPD(7, 35) .In a quaxi expermental study which was conducted in peri-urban communities of Karachi, Pakistan Post partum anxiety and depression was associated with domestic violence (12). In addithion to that in similar studies which were conducted in different countries(49-53) also revealled that domestic violence was a contributing factor for postpartum depression in contrast in a prospective chort study which were conducted in nephal(54) it was mentioned that there were no association between domestic violence and postpartum depression.

2.2.3. History of Substance use

Substance use particularly alcohol or cannabis, are not uncommon before or during pregnancy. Multiple addictions are also common, in particular alcohol with tobacco and alcohol with cannabis. On a Systematic Review of The Prevalence of Postpartum Depression among Women with Substance use, an abuse history, or Chronic illness by including seventeen papers on

assessing depression between 3 and 52 weeks of postpartum periods ,There were high rates of PPD among substance-using women and those with current or past experiences of abuse(55). Again another study revealed that Prevalence of major depression was 12.4% for past-year pregnant women, of these women's 35.4% had nicotine dependence. Only 11.4% of non-depressed, past-year pregnant women had nicotine dependence(56). In a longitudinal study conducted in a health region near Vancouver, British Columbia to determine the contribution of interpersonal violence and substance use to the prediction of postpartum depressive symptomatology 634 women's were participated from those 497 (78%) subsequently completed questionnaires . With respect to substance use, while 15.8% (n= 100) of women indicated that they smoked cigarettes, less than 1% (n= 4) reported having a drug or alcohol problem; 4.6% (n= 29) indicted that they used recreational drugs such as marijuana(57).

2.2.4. Obstetrics factors

Obstetrics factors has been found to elevate the risk of PPD .Unplanned pregnancy is one of the determinants for depressive mental problem during the postpartum period (18, 21, 37, 40, 46) .In contrast to this, a study conducted in Iran indicated that unwanted pregnancy is not a risk factor for PPD(45). This same study showed that there was no association between mode of delivery and PPD. But in other studies which were conducted in western Iran and China it has been mentioned that mode of delivery is among the leading contributing factor for postpartum depression (7, 19). A research done on risk factor of depression in rural area of Isfahan provice, Iran primipara women were at higher risk for postpartum depression compared with multiparas (21).But this is different from the research finding in India which is multiparas were more vulnerable for postpartum depression(48). Again another study revealed that there was no association between parity and postpartum depression (38) .The study from India showed that pregnancy complication or illness did contribute for postpartum depression (17). According to the 2012 CDC (communicable disease control) report on "depression among women of reproductive age" women's who lost a baby or having an infant who is hospitalized are other factors(16). In addition in a cross sectional study which were conducted in southern eastern Ethiopia, at Goba and Robe town (44)history of child death was mentioned as a risk factor.Additional factors like Stressful life events during pregnancy have been found to increase

the risk of PPD (8, 22). To a certain extent women's who have undesired newbor sex will be depressed at the postpartum period(7, 17, 21, 25, 48).

2.2.5. Previous psychiatric history

Previous psychatric history has been found to elevate the risk of postpartum depresion. There are pleanty of studies which tells that womens with previous history of depression found to be at increased risk of PPD (6, 21, 34, 36, 39, 40). In brazil there was a cross sectional study on the assesment of prevalence and associated of PPD with bio-social-demographic factors , family history of psychological disorders was mentiond as a contributina cti hicre"

2.3. Conceptual framework

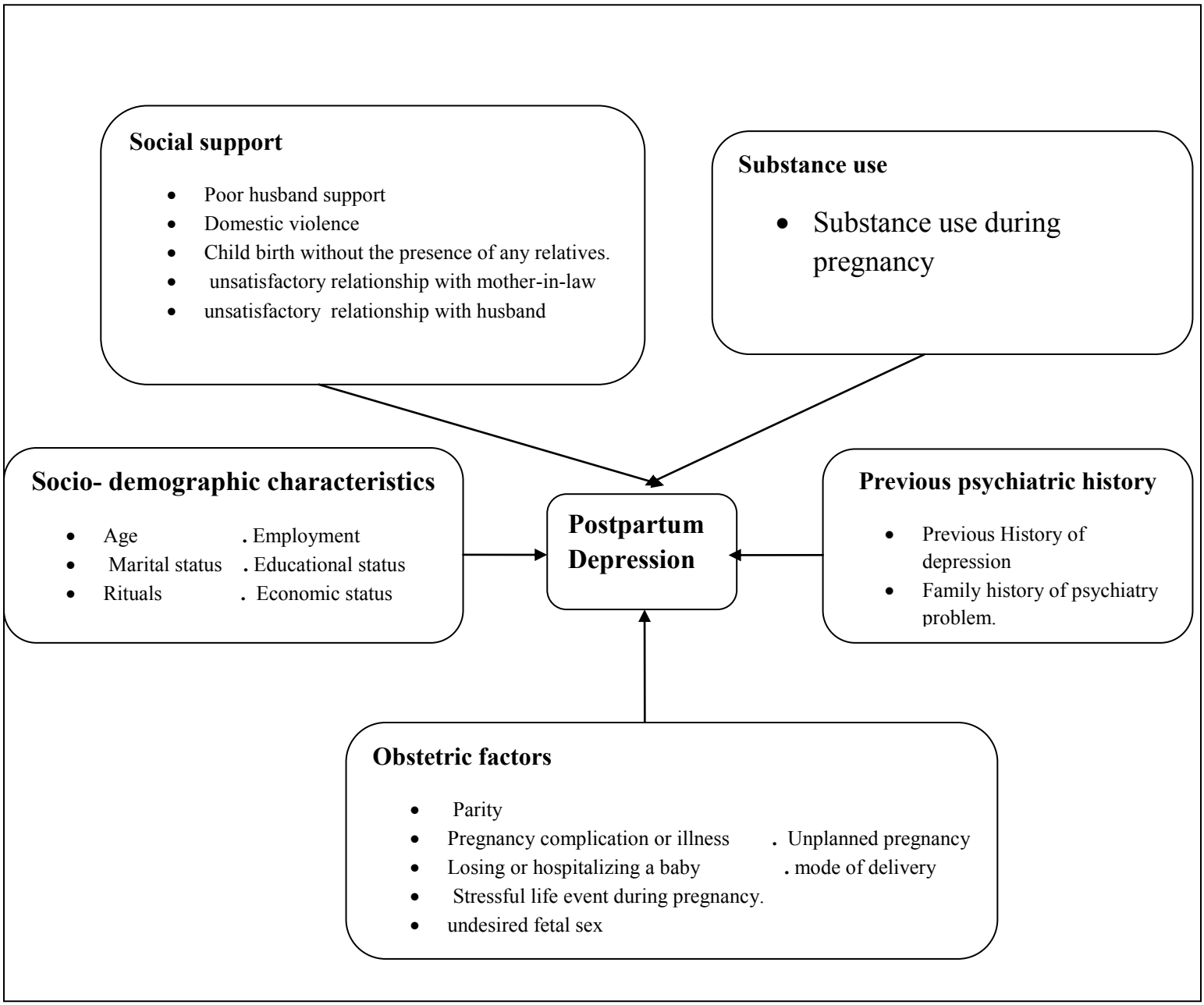

Figure 1 conceptual frame work literature review (22, 34, 38, 40) .

CHAPTER 3: OBJECTIVE OF THE STUDY

3.1. General objective

- To assess the prevalence and associated factors of postpartum depression among mothers attending public health centers of Addis Ababa, Ethiopia, from March 2016 –April 2016.

3.2. Specific objectives

- To determine the prevalence of postpartum depression.
- To identify factors associated with postpartum depression.

CHAPTER 4: METHODS AND MATERIAS

4.1. Study area

The study was conducted in Addis Ababa city. Addis Ababa is the capital city of Ethiopia and the seat of the African Union. It has a total population of 3,048,631 of which 1,452,663 males and 1,595,968 are females (58).Addis Ababa has a total of 11 government owned hospitals, 90 health centers, 31 private hospitals and 700 different level private clinics. Each sub-city has more than one health centers. Health centers are easily accessible for the community. They are supposed to provide a package comprising both preventive public health and essential curative services. They have a capacity of 10 beds, and are open for 24 hours in a day to provide curative health, emergency service and maternal and child health services. Health centers are usually staffed by health officers or/and a doctor, clinical nurses, midwives, and other health personnel including administrative Staff (59).

4.2. Study design and period

Facility based cross-sectional study design was employed to collect data on the prevalence and associated factors of postpartum depression in selected health centers, Addis Ababa, Ethiopia from March 2016 –April 2016.

4.3. Population

4.3.1. Source population

The source populations were all women who came for postnatal care and vaccination services within 6 weeks after delivery in sampled health centers in Addis Ababa, Ethiopia.

4.3.2. Study subjects

Each eligible women who came to health centers for postnatal care and vaccination service within 6 weeks after delivery in sampled health centers in Addis Ababa, Ethiopia.

4.4 .Inclusion and exclusion criteria

4.4.1. Inclusion criteria

All women who came for postnatal care and vaccination service within 6 weeks after delivery in selected health centers during data collection period and consented to participate in the study were included.

4.4.2. Exclusion criteria

Women who were seriously sick, unable to respond to the questions and those who were refusing to participate in the study were excluded were excluded.

4.5 .Sample size determination

The required sample size was determined using single population proportion formula with the following assumptions:

- N = the number of participants to be interviewed;
- $(Z\ \alpha/2)^2$ = standardized normal distribution value for the 95% CI, =1.96
- P = Proportion of prevalence of postpartum depression P= 50%
- d = margin of error taken as 5%,

The sample size calculated using the above formula is

$$N = \frac{(Z\ \alpha/2)^2\ p\ (1-p)}{d^2}$$

$$N = \frac{(1.96)^2\ X\ (0.5\ (1-0.5))}{(0.05)^2}$$

$$N = \frac{0.9604}{0.0025}$$

N = 384.16 ~ 384 Participants

By adding 10% of non-response, the final sample size was 422. Since multistage sampling technique was used, the sample size was multiplied by the design effect. By taking 1.5 as the design effect, the required sample size became 633.

4.6 .Sampling procedure and technique

Multistage sampling technique was employed to select the respondents of the study. First out of ten sub-cities found in Addis Ababa city government, four sub cities namely Lideta, Nifasilik lafto, Kirkos and Gulele were selected using simple random sampling method. Secondly, out of a total of 33 health centers found in the selected four sub-cities, a total of 10 (2 from Lideta and Nifasilik lafto each and 3 from Gulele and kirkos each) Health centers were selected by a lottery method. The numbers of women included in the study from the selected health centers were determined using proportion to size allocation technique on the basis of previous three month data from the respected health centers. Systematic random sampling was used to select women included in the study. To identify the interval the average number of women expected per day in each health center was divided by number of women to be interviewed per day from respective health centers. The first woman was selected by lottery method and then every 2 women (which is calculated for each health center) visiting the health center were selected for the study.

Calculation for sample size determination of participants from each health centers based on the previous three months client flow from registration book.

Formula = Each health centers average sample size x total sample size (633)

Total average population of the ten health centers

1. Teklehaymanot health center = $\frac{50 \times 633}{414}$ = 76 participants
2. Lideta health center = $\frac{40 \times 633}{414}$ = 61 participants
3. Woreda 10 health center = $\frac{20 \times 633}{414}$ = 31 participants
4. Woreda 12 health center = $\frac{50 \times 633}{414}$ = 76 participants
5. Kirkos health center = $\frac{70 \times 633}{414}$ = 108 participants
6. Efoyta health center = $\frac{10 \times 633}{414}$ = 16 participants
7. Feres meda health center = $\frac{34 \times 633}{414}$ = 52 participants
8. Addisu gebeya health centers = $\frac{50 \times 633}{414}$ = 76 participants
9. Hdase health center = $\frac{50 \times 633}{414}$ = 76 participants
10. Shiromeda health center = $\frac{50 \times 633}{414}$ = 76 participants

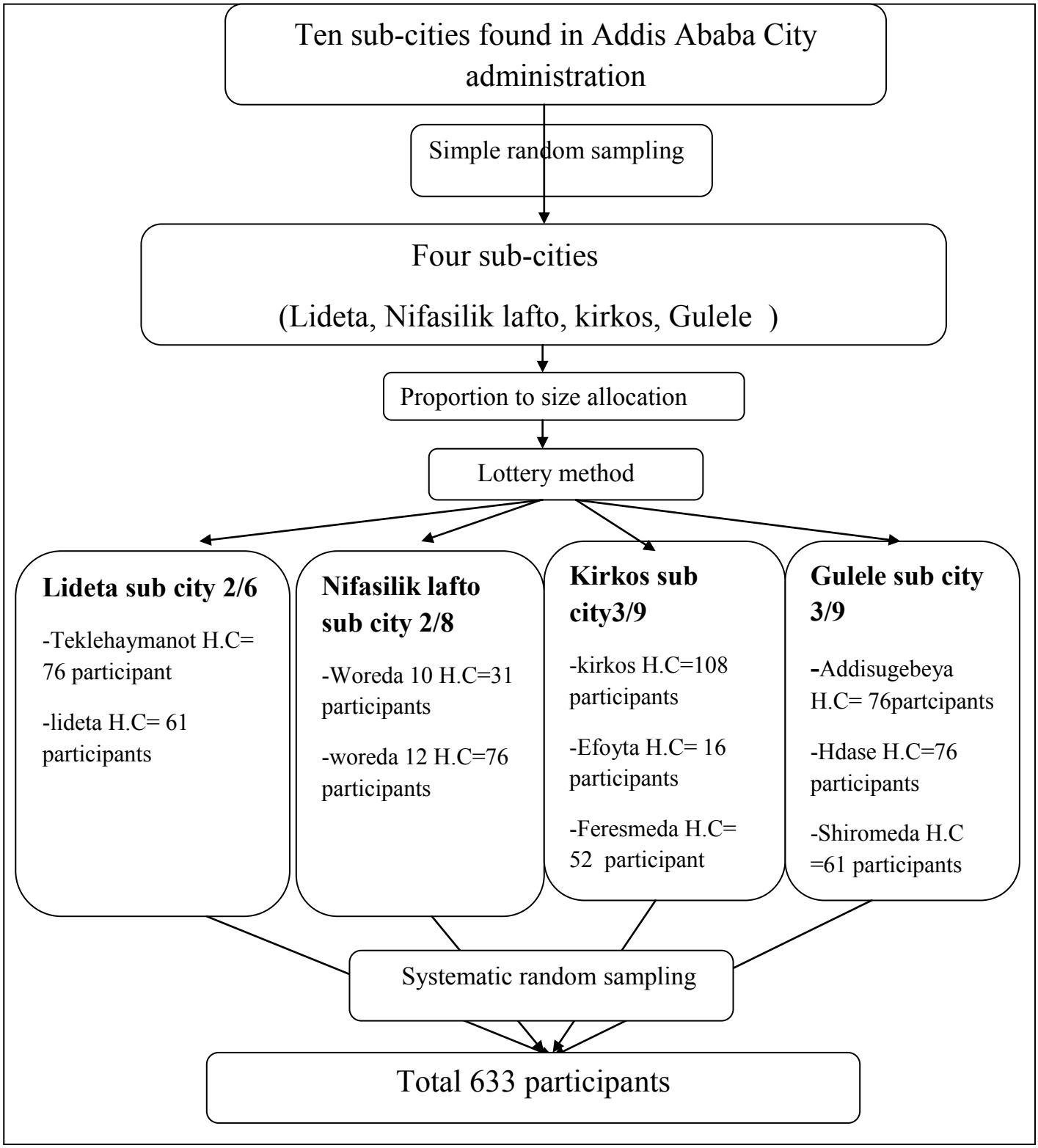

Figure 2 Schematic presentation of sampling procedure

4.7 .Variables of the study

4.7.1. Dependent variable

- Postpartum depression

4.7.2. Independent variable

- **Socio-demographic characteristics** (age, educational status, economic status, marital status and employment)
- **social support** (Poor husband support, domestic violence, Child birth without the presence of any relatives, unsatisfactory relationship with mother-in-law, unsatisfactory relationship in marriage)
- **Substance use** (substance use during pregnancy)
- **obstetrics factors**(parity, unplanned pregnancy, losing or hospitalizing a baby, mode of delivery, pregnancy complication or illness , Stressful life event during pregnancy and undesired fetal sex)
- **previous psychiatric history** (history of depression and family history of psychiatric problems)

4.8. Operational and term definitions

1. **Postpartum partum depression**; according to Edinburgh postnatal depression scale (EPDS) Questions 1, 2, & 4 are scored 0, 1, 2 and 3 with first choice scored as 0 and the last choice scored as 3. Questions 3, 5-10 are reversely scored, with the first choice scored as 3and the last choice scored as 0.After adding up all the scores, those women who scored $\geq$13 were concluded to have postpartum depressed.

2. Postpartum period; it's a period beginning immediately after the birth of a child and extending for about six weeks.

3. Postpartum depression; women who experience depressed mood or sever mood swing, excessive crying, difficult bonding with baby, withdrawing from family and friends, loss of appetite or eating much more than usual, inability to sleep, overwhelming fatigue or loss of energy.

4. Mental health; it's a level of psychological well being or an absence of mental disorder it's a psychological state of someone who is functioning at satisfactory level of emotional and behavioral adjustment

5. Social support; the perception and actuality that one is cared for, has assistance available from other people

6. Socio-cultural; a set of belief, customs, practice and behavior that exist in a certain society.

4.9. Data collection tool

A structured interviewer administered questioner was used to collect information from study participants. It composed of two sections.

Section A

The instrument was adopted from previous published literatures (7,8,10,12,14,16,22 &34) .The questioner was designed in English and translated to local Amharic language and then back translated in to English by the third person to cheek for consistency. The tool involved five parts. Part one involved 15 questions about socio- demographic characteristics, part two involved 11 questions concerning obstetric factors, part three involved 4 questions related to substance used , part four consisted with 2 questions on past psychiatric history and part five involved 6 questions related to social support.

Section B

The 10 questions of Edinburg postnatal depression scale (EPDS) is a valuable and efficient way of identifying patients at risk for postnatal depression. It indicates how the mother has felt during the previous 7 days. The EPDS generated sensitivity and specificity of 78.9% and 75.3% respectively (60). It was translated into Amharic and back translated to English by Ato Birhanu Woredofa (Bsc, Msc psychiatric nursing).

4.10 . Data collection procedure

Data was collected with an interviewer administered questionnaire to gather information from mothers who came for postnatal and vaccination service. The process took place throughout the data collection period and culminated at the end of the period. Data was cheeked for completeness every day and entered in to computer. Five nurses who graduated diploma in nursing from private college and who were not employees of the selected health centers were required as a data collectors and they were trained for one day on information about the research objective, eligible study subjects, data collection tools and procedures, and interview methods.

4.11. Data quality control management

The data collection instrument was pretested for accuracy of responses, language clarity, appropriateness of data collection tools, estimate the time required and the necessary amendments were consider based on it prior to the actual data collection. It was carried out one week proceeding to the actual data collection period in selam health center in five percent of non study participants that fulfill the inclusion criteria. In addition, the data collectors were trained for one day on the techniques of data collection. The training also included importance of disclosing the possible benefit and purpose of the study to the study participants before the start of data collection. Maintaining confidentiality of the participants throughout the whole process of data collection was also discussed and ascertained during the training. The researcher checked for completeness and consistency of questionnaires filled by the data collectors to ensure the quality of the data, and also visited the data collectors as many times as possible to check whether he/she collected the data appropriately. The researcher also appraised the data during the data analysis stage to verify the completeness of the collected data.

4.12. Data analysis procedure

After data collection, filled data was entered in statistical software Epi data 3.1 and was subjected to cleaning using simple frequency and tabulation to ensure its validity. Then, the analysis was made with IBM SPSS version 21 statistical software. After exporting the prepared data descriptive statics such as Frequency distribution and measure of central tendency and variability (mean and standard deviation) were computed to describe the major variables of the study. To indicate the strength and statistical significance of the association of the selected independent and dependent variables, odds ratio and 95% CI were used. For all of statistical tests used in this study, the significant level was set at p-value ≤ 0.05.

4.13. Ethical Considerations

Ethical approval was obtained from research ethical committee of Addis Ababa university department of nursing and midwifery. Written consent was obtained from Addis Ababa administrative health bureau and formal letter was written from the health bureau to the selected sub cities. Permission was attained from the responsible body to the health centers. Written informed consent was obtained from each participant after the investigator had explained the nature, purpose and procedure of the study. Participants completed the questioner in a separate room whenever they asked for it. Anonymity and confidentiality of the data providers were strictly maintained. Participants were assured that their participation is voluntarily, and they had every right to withdraw or refuse to give information at any time in the study without any penalty. Participants who were identified with depressive symptoms were linked with mental health clinics.

4.14. Dissemination of results

Primarily, the result of this study will be submitted to, Addis Ababa university department of maternity and reproductive Health and defended as partial fulfillment of the requirements for the degree of masters in The final report is presented as partial fulfillment of the degree of Masters in maternity and reproductive Health science. The information will be disseminated to the respective bodies (Addis Ababa city administration health bureau and Federal Ministry of Health) and the results will be published in national and international journal and presented in annual scientific meeting and conferences.

5. Result

5.1. Socio-demographic characteristics

A total of 633 post-partum women were requested to participate in this study out of which 618 (97.6%) participants responded fully to all the questions. The mean age of respondents were 28.05(Standard deviation, SD=5.049), the median age was 28 years (range; 16-46 years). From the total study subjects 526 (85.1%) were married. Majority, 502(81.2%) of the participants attended formal education. Two hundred eighty one (45.5 %) of the respondents were unemployed. Of all 210(34.0%) of participants reported that they have law family income, among these 170 (27.5%) of them said that they earned less than four hundred forty five birr per month on average (see Table 1).

Table 1 Socio-Demographic characteristics among women in postpartum period, in health centers of four sub-cities of Addis Ababa city Administration, Ethiopia, (N=618).

Characteristics	Frequency	Percent
Age in years		
15-24		
25-34		
≥35		

5.2. Obstetric and clinical characteristics

The obstetric and clinical characteristic of the study participants is shown in table 2. Of all the respondents 228 (36.9%) reported it was being their first pregnancy; and 179 (29.0%) of participants declared that it was unplanned. Moreover, the sex of the last baby had a comparable sex distribution (49.7% male and 50.3% female). In addition, regarding the desire sex of the last baby 136 (22.0%) of the respondents were not satisfied with the sex of their infant and 131 (21.2%) being delivered by caesarian section. Furthermore One fourth of the participants 164(26.5%) had suffered with illnesses during their pregnancy and 40 (6.5%) of mothers mentioned that they experienced death of a child and 104(16.8%) hospitalizing their babies in their life time. It was also reported that 21(3.4%) of the respondents had stress full life events in the recent pregnancy (see Table 2).

Table 2 Participants Obstetrics and clinical characteristics in postpartum period, from health centers of four sub-cities of Addis Ababa city Administration, Ethiopia, (N= 618).

Characteristics	Frequency	Percent
Number of pregnancy		
1	228	36.9
2-3	311	50.3
≥4	79	12.8
Planed pregnancy		
Yes	439	71.0
No	179	29.0
Sex of last baby		
Male	307	49.7
Female	311	50.3
Desired sex of the baby		
Desired	207	33.5
Undesired	136	22.0
I don't mind	275	44.5
Mode of delivery		
Vaginal	416	67.3
Cesarean section	131	21.2
Instrumental delivery	71	11.5
Illness during pregnancy		
Yes	164	26.5
No	454	73.5
Experience death of a baby		
Yes	40	6.5
No	578	93.5
Any of children hospitalized		
Yes	104	16.8
No	514	83.2
Stressful life event during pregnancy		
Yes	21	3.4
No	597	96.6

5.3. Substance use among postpartum women

Nearly one fourth of the study subjects 90 (14.6%) claimed that they had used substance before pregnancy and alcohols (areke, tela, teji, beer and wayin) 79 (87.8%) took the leading from all the types of the substances. Concerning substance used during the recent pregnancy 16 (2.6%) of respondents had used it, in this case also alcohols (areke, tela, teji, beer and wayin) 13 (81.25%) was most used (see Table 3).

Table 3 History of substance use among postpartum women's, from health centers of four sub-cities of Addis Ababa city Administration, Ethiopia, (N= 618).

Characteristics	Frequency	Percent
Substance use before pregnancy		
Yes	90	14.6
No	528	85
Kinds of substance		
Alcohol	79	87.8
Chat	4	4.4
Cigarette and shisha	7	7.8
Substance use in your last pregnancy		
Yes	16	2.6
No	602	97.4
Kinds of substance		
Alcohol	13	81.25
Chat	1	6.25
Cigarette and shisha	2	12.5

5.4. Personal and family history of depression among postpartum women

The family and previous history of depression of respondents are presented in table 4. A total of 93 (15.0%) participants had previous history of postpartum depression. In addition, 90 (14.6%) of the respondents had family history of depression (see Table 4).

Table 4 Personal and family history of depression among postpartum women's, from health centers of four sub-cities of Addis Ababa city Administration, Ethiopia, (N= 618).

Characteristics	Frequency	Percent
Previous history of depression		
Yes	93	15.0
No	525	85.0
Relatives suffered from mental illness		
Yes	90	14.6
No	528	85.4

5.5. Social support among postpartum women

The social support participants gained during pregnancy and child birth is presented in table 5. Eighty seven (14.1%) of the study subjects reported they had experienced domestic violence. Majority of participants were satisfied with their marriage however 113(18.8%) of them described that their relationship with their husband as unsatisfactory and 104 (16.8%) of the respondents lack the assistance from husband. It has been also reported that around one tenth 58 (9.4) of respondent's relatives were not present at the health facilities during labor. Regarding the relationship they had with their mother in law 178 (28.8%) stated that they were unhappy (see Table 5).

Table 5 social support among postpartum women's, from health centers of four sub-cities of Addis Ababa city Administration, Ethiopia, (N= 618).

Characteristics	Frequency	Percent
Abuse/domestic violence		
Yes	87	14.1
No	531	85.9
Satisfy with marriage		
Yes	505	81.7
No	113	18.8
Husband support		
Yes	514	83.2
No	104	16.8
Relatives present during labor		
Yes	560	90.6
No	58	9.4
Satisfy in relation with mother-in-law		
Yes	440	71.2
No	178	28.8

5.6. Prevalence of postpartum depression

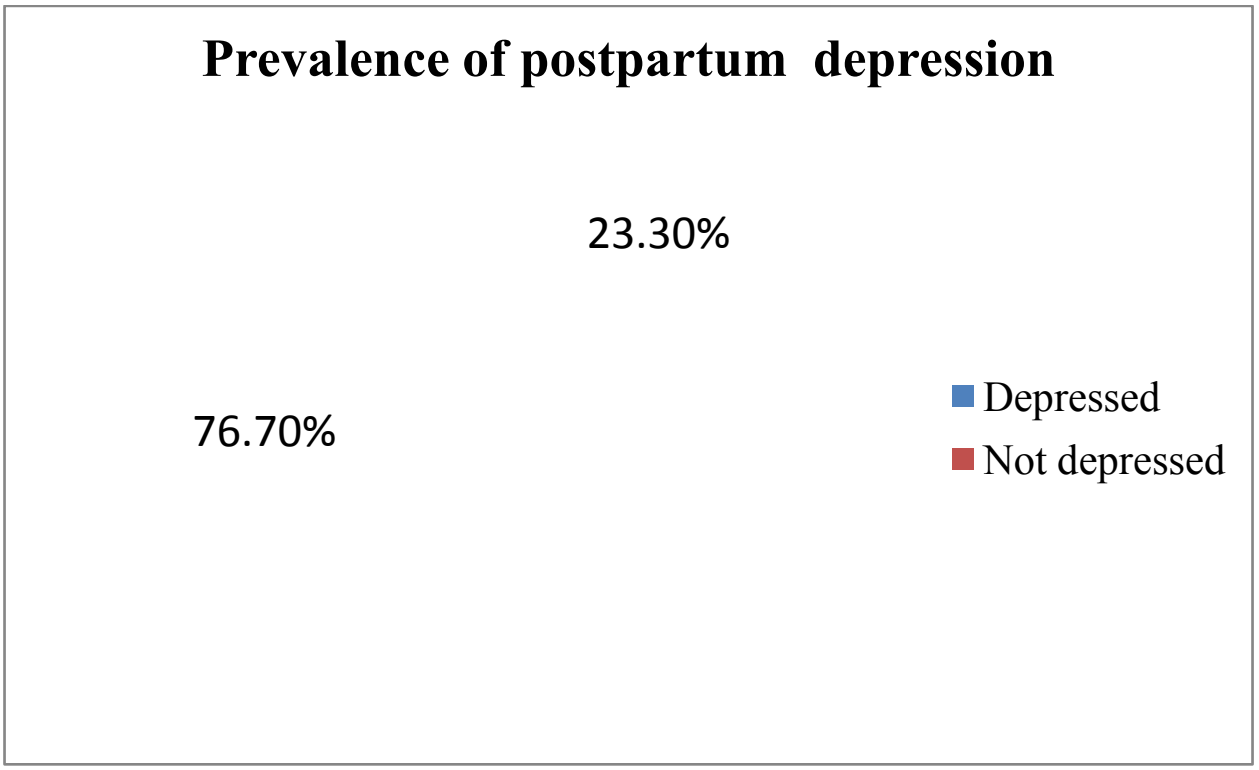

Figure 3 prevalence of postpartum depression among postpartum women's, from health centers of four sub-cities of Addis Ababa city Administration, Ethiopia, (N= 618).

From all respondents 144(23.3%) had postpartum depression, postnatal depression score ranged from 1 to 28 in the overall sample, as listed in table 6. Fifty one (8.3%) of the respondents scored 1 while only two (0.3%) scored 28. with the cutoff point $\geq$ 13 a total of 144 (23.3%) scored above the cutoff point and hence considered to have postpartum depression (see figure 3).

5.7. EPDS (Edinburgh postnatal depression scale) responses among participants

Edinburg postnatal depression scale (EPDS) composed of ten questions which indicate how the mother has felt during the previous seven days. Questions 1,2and 4 were scored 0, 1, 2 and 3whereas questions 3, 5-10 were scored 3, 2, 1 and 0 so there were recoding of those question. From all the respondents 69(11.2%) reported that they were not able to laugh and see funny side of things. For forty eight (7.8%) of the participants it was so difficult to look forward with enjoyment to things. Most of the time 58 (9.4%) were blaming themselves unnecessarily. Nearly one sixth of the study participants were anxious or worried for no good reason. In addition regarding scaring or panicking for no good reason 30(4.9%) of the participants reported that they faced it quite a lot .from all the respondents 25(4.0%) stated that they couldn't be able to cope up with things at all. Most of the time for twenty six (4.2%) of the study participants it was difficult to sleep and 21(3.4) respondents reported that most of the time they felt sad or miserable. In addition 18(2.9%) were unhappy and have been crying most of the time and only two (0.35%) were had a thought of harming themselves (see Table 6).

Table 6 EPDS (Edinburgh postnatal depression scale) responses among postpartum women's, from health centers of four sub-cities of Addis Ababa city Administration, Ethiopia, (N= 618)

Characteristics	Frequency	Percent
Experienced laugh and see funny side of things		
As much as always I could	394	63.8
Not quite so much now	102	16.5
Definitely not so much now	53	8.6
Not at all	69	11.2
Look forward with enjoyment to things	385	62.3
As much as I ever did	125	20.2
Rather less than I used to	60	9.7
Definitely less than I used to	48	7.8
Hardly at all		
Blamed yourself unnecessarily		
No never	309	50.0
Not very often	119	19.3
Yes some f the time	132	21.4
Yes most of the time	58	9.4
Been anxious or worried for no good reason		
No not at all		
Hardly ever	319	51.6
Yes sometimes	70	11.2
Yes very often	175	28.3
	54	8.7
Felt scared or panic for no good reason		
No not at all	375	60.7
No, not much	102	16.5
Yes, sometimes	111	18.0
Yes, quite a lot	30	4.9
Things have been on top of you		
No I have been coping		
No most of the time	388	62.8
Yes sometimes I haven't been coping as well as	166	18.8
usual	89	14.4
Yes most of the time I haven't been able to cope		
at all	25	4.0

Difficult to sleep		
No, not at all	375	60.7
Not, very often	144	23.3
Yes sometimes	73	11.8
Yes most of the time	26	4.2
Felt sad or miserable		
No, not at all	386	62.5
Not, very often	149	24.1
Yes, quite often	62	10.0
Yes, most of the time	21	3.4
So unhappy you have been crying		
No, never	410	63.3
Only occasionally	149	24.1
Yes quite often	41	6.6
Yes, most of the time	18	2.9
Thought of harming your self		
Never	544	88.0
Hardly ever	41	6.6
Sometimes	31	5.0
Yes, quite often	2	0.3

5.8. Bivariate and multivariate logistic regression analysis of postpartum depression and its associated variables

Binary Logistic regression was performed to assess the association of each independent variable with the outcome variable (postpartum depression) .The variables that showed a significant level ($p < 0.05$) were added to multivariate regression model. The model contained fourteen independent variables (marital status, occupational status, educational status, difficult in income, history of death of a baby, mood of delivery, planed pregnancy, substance use during pregnancy, history of depression, domestic violence, happy in marriage, relatives present at the health facility during labor, happy by the relationship with mother-in-law, and desired sex of infant). The result of multivariate analysis showed that five variables (educational status, occupational status, mode of delivery, happy with the relationship with mother-in-law and desire sex of fetus) were not significantly associated with postpartum depression though they were shown to be associated in the bivariate analysis. Hence, only nine variables were found to have a significant association with postpartum depression.

The result revealed that study subjects who were unmarried were associated with the dependent variable by having 2.8 odds of post-partum depression when compared with those who were married [AOR=2.5(95% C.I:1.2-4.9)]. In addition respondents who had problem in income were nearly two times more likely to be depressed than those who had no problem in income [AOR=2.3 (95% C.I: 1.3-4.0)].

The other variable that was found to have association was participant's previous history of child death. Respondents who had experienced their child deaths at least once were over three times to be depressed than those who had not experienced it [AOR=3.2(95% C.I: 1.3-8.0)].

Furthermore unplanned pregnancy was also found affecting the outcome variable. Those women who had not planned their current pregnancy were over three times more to have postpartum depression compared to those who had planned their pregnancy [AOR=2.9(95% C.I: 1.6-5.0)].

Those women who had used substance were nearly five times at higher odds of having postpartum depression as compared to women who had not used substance during pregnancy[AOR=4.9(95% C.I: 1.1-21.3)].

The other variables that were found to have association with postpartum depression were previous history of postpartum depression. Respondents who had previous history of depression were 4.414 times more likely to be depressed as compared to women who had no history of depression[AOR=4.2(95% C.I: 2.3-7.8.)].

Furthermore, a history of domestic violence were also found affecting the outcome variable. Respondents who had faced with domestic violence were over three times more likely to report postpartum depression in contrast to those who did not appeared with domestic violence [AOR=3.1 (95% C.I: 1.6-5.9)]. Similarly participants who had unhappy relationship with their husband were 2.882 times more likely to have postpartum depression than those who are happy [AOR=2.7(95% C.I: 1.4-5.2)].

In addition who gave birth without the presence of any relatives in the health institutions were nearly three times more depressed when compared to those who gave birth with the presence of relatives in the health facilities [AOR=3.6(95% C.I: 1.6-8.3)] (table 7).

Other variables such educational status, occupational status, mode of delivery, happy with the relationship with mother-in-law and desire sex of newborn didn't show any association to postpartum depression.

Table 7 Bivariate and multivariate logistic regression analysis of postpartum depression (N=618)

PREVALENCE AND ASSOCIATED FACTORS OF POSTPARTUM DEPRESSION					
Variables	**Depressed n (%)**	**Not Depressed n (%)**	**COR(95% C.I)**	**AOR(95% C I).**	**P- Value**
Attended school					
Yes	100(19.9)	402(80.1)	1	1	
No	44(37.9)	72(62.1)	2.5(1.6,3.8)	0.8(0.4,1.5)	0.475
Marital status					
Married	90(17.1)	436(82.9)	1	1	
Unmarried	54(58.7)	38(41.3)	**6.9(4.3,11.0)**	**2.5(1.2 ,4.9)****	**0.011**
Occupation					
Employed	67(19.9)	270(80.1)	1	1	
Unemployed	77(27.4)	204(72.6)	1.5(1.0,2.2)	1.0(0.6,1.8)	0.869
Income Difficulty					
Yes	90(42.9)	120(57.1)	**4.9(3.3,7.3)**	**2.3 (1.3,4.0)****	**0.003**
No	54(13.2)	354(86.8)	1	1	
Children death					
Yes	21(52.5)	19(47.5)	**4.1(2.1,7.8)**	**3.2(1.3,8.0)***	**0.013**
No	123(21.3)	455(78.7)	1	1	
Mood of delivery					
Cesarean section	20(15.3)	111(84.7)	0.6(0.3,1.0)	0.5(0.2,1.0)	0.055
Instrumental delivery	25(35.2)	46(64.8)	1.7(1.0,3.0)	0.8(0.4,1.8)	0.668
Vaginal	99(23.8)	317(76.2)	1	1	0.159
Planed pregnancy					
Yes	51(11.6)	388(88.4)	1	1	
No	93(52.0)	86(48.0)	**8.2(5.4,12.4)**	**2.9(1.6,5.0)*****	**0.000**
Substance use					
Yes	10(62.5)	6(37.5)	**5.8 (2.1,16.3)**	**4.9(1.1,21.3)***	**0.032**
No	134(22.3)	468(77.7)	1	1	
History of depression					
Yes	53(57.0)	40(43.0)	**6.3(4.0,10.1)**	**4.2(2.3,7.8)*****	**0.000**
No	91(17.3)	434(82.7)	1	1	
Domestic violence					
Yes	52(59.8)	35(40.2)	**7.1(4.4,11.5)**	**3.1(1.6,5.9)*****	**0.000**
No	92(17.3)	439(82.7)	1	1	

Happy in marriage					
Yes	77(15.2)	428(84.8)	1	1	
No	67(59.3)	46(40.7)	**8.1(5.2,12.7)**	**2.7(1.4,5.2)****	**0.003**
Relatives present during labor					
Yes	102(18.2)	458(81.8)	1	1	
No	42(72.4)	16(27.6)	**11.8(6.4,21.8)**	**3.6(1.6,8.3)****	**0.002**
Happy by the relation with mother-in-law					
Yes	88(20.0)	352(80.0)	1	1	
No	56(31.5)	122(68.5)	1.8(1.2,2.7)	0.8(0.5,1.5)	0.839
Desired sex of newborn					
Undesired	30(22.1)	106(77.9)	0.7(0.4,1.2)	1.0(0.5,2.0)	0.801
Desired	36(17.4)	171(82.6)	0.5(0.3-0.8)	1.0(0.6,1.8)	0.992
I don't mind	78(28.4)	197(71.6)	1	1	0.964

Note; *P value is significant at P<0.05 **p value is significant at P<0.01
***p value is significant at P<0.001 P value of Hosmer and Lemeshow Test = 0.578
1=reference

6. Discussion

The finding of this study indicated the prevalence and associated factors of postpartum depression among a sample of postnatal women who gave birth in different health centers in Addis Ababa, Ethiopia. The study participants were selected from women who came for postnatal and vaccination services in health centers. Findings from this study may therefore highlight the current significant levels of postpartum depression and its contributing factors. In addition it verified the need and possibility of integrating depression screening into maternal and child health services.

The study indicated 144 (23.3%) respondents were depressed during their postpartum period. This result implied that significant proportion of women were experiencing post partum depression, hence maternal mental health problem is now becoming a substantial concern for which services are urgently needed. This was somewhat comparable with other study which was conducted in China, City of Poland and Lahore studies also found equivalent prevalence rate. Where postpartum depression was presented 27.37% (7), 23.2% (22) and 25% (61) Respectively. On the other hand this figure was higher when compared to other similar studies done in Japan(36), Canada(6), Qatar(37) turkey (40) and Sudan (11) which was 7.7%, 8.69%, 18.6% ,15.4% and 9.2% correspondingly. Discrepancy in estimation might be due to the different tools, assessment period, methods and economical status; for instance the study in Japan was conducted by using Japanese version of 12 questions which assessed the general health status of participants at fourth months after delivery by taking $\geq$ 4 as cut of score. Furthermore depression anxiety stress scale was used in the study which was conducted in Qatar among 2091 postnatal women by using face to face interview. Similar studies from Ethiopia in Amhara region (43) and at Goba and Robe town of Bale zone, Oromia region (44) in which 32.8% and 31.5% of postnatal women respectively at their postnatal period were depressed had a higher prevalence report than the present study. Variation in estimation from the present study might be due to usage of different tools and sample size . Both studies used self reporting questioner (SRQ) of 20 yes no questions which was developed by WHO in order to evaluate all minor mental health problems by taking 1319 postnatal women who gave birth in the previous 24 months and 340 postnatal women using community based cross sectional study design respectively. Likewise Iran (19),

South Africa (14) and Uganda (13) were also had a elevated prevalence of postpartum depression.

This study found that postpartum depression was significantly higher among unmarried than those who were married [AOR 2.5, (1.2, 4.9)]. This result is consistent with the study conducted in United States (8, 56), Uganda(62) Jamaica(15) and Amhara region in Ethiopia (43). This finding might be due to the fact that during the period of pregnancy and delivery unmarried women were handling situation alone and did not had the needed support from their partner.

Furthermore, participant's economical status had also an association. It was significantly higher among participants with low economic status compared to those who had high economic status [AOR2.3(95% C.I 1.3, 4.0)]. This was in line with other studies conducted in Saudi Arabia (38),Qatar (37), Korea (24), western Iran (19), south India (17), and Japan(36) by stating law economic status had a borderline significance with depression. The current study also revealed that participants who earned on average less than four hundred forty five birr (19.3$) per month was found to be depressed. The reason for women's depression might be due to mothers who have money constraints overstress in giving her child all things that she think she had to in addition women's might have experienced stress full life event during pregnancy and previous life history related with money.

Another significant association found in this study was between depression and previous history of child death in which postpartum depression was significantly higher among participants who experienced lose of a baby at least once [AOR 3.2(95% C.I 1.3,8.0)] than their respective reference groups. This result is consistent with the 2012 CDC report on "depression among women of reproductive age"(16) and other study which was conducted among reproductive age groups in Goba and Robe town of Bale zone Oromia region, South East Ethiopia (44) where record of child death showed the strongest association with postpartum depression. This might be due to the fact that negative life events in the previous history is most influential on individuals mental status it also might be because they frightened they might lose their new born as well.

Unplanned pregnancy was also associated with higher odds of having postpartum depression [AOR 2.9(95% C.I 1.6, 5.0)]. These result were also observed in most of previous studies carried out in Qatar (37), turkey (40), Iran (21)and northwestern Brazil (18) where a greater likelihood of

post partum depression related with unplanned pregnancy was reported. On the contrary a cross sectional study which were conducted in Iran unplanned pregnancy was not determinant factor for post partum depression (45).the difference might be due to economical variation between Ethiopian and Iranian society . Additional study which was conducted among pregnant mothers who follow antenatal service in Addis Ababa Ethiopia also highlighted that unplanned pregnancy had a contribution for antenatal depression (42).This express that unplanned pregnancy were a ground for both antenatal and postnatal depressions. In addition to that even if the family planning service coverage in the country has increased unplanned pregnancy are still common so it implies that there is still a gap in utilization of the service.

As observed from this and other studies it was evident that previous history of mental health problem was a major determinant factor of post partum depression [AOR 4.2(95% C.I 2.3,7.8)]. This substantial higher risk of postpartum depression was Concordance with many other findings. Which reported a magnified likelihood of depression with the individuals who had a previous history of mental health problem (6, 25, 36, 39). Furthermore study in Brazil (34) also revealed postpartum depression was not only related with personal history of mental health problem but also family history of depression. This finding was again consistent with other study which was conducted among pregnant women in Addis Ababa Ethiopia (42). Reason for relapse of depression among women who had experienced mental health problem before was that they might stress themselves thinking about their pregnancy and delivery. Hormonal imbalance during pregnancy could also be other reason for relapse of depression. So this finding points out to the need of having an integrated mental health screening service in health care institutions in order to early identify, treat and maintain women's emotional stability.

The other variable that was significantly associated with postpartum depression was substance (alcohols (tela, teji, beer and Wayne), chat, cigarettes and shisha) use during pregnancy [AOR4.9 (95% C.I 1.1, 21.3)]. This finding was in line with a literature despite additional substances were also used. In which seventeen papers were reviewed and depression among women between 3 and 52 weeks postpartum were assessed (55), hence women who were using substance during pregnancy were highly exposed to post partum depression. In other cross sectional study among 43093 adult women from which 1524 were pregnant and who had been pregnant in the presiding 12 months revealed that 12.4% of the respondents were exposed to major depression hence out of

which 35.4% were nicotinic dependent(56). The present study also highlighted that rate of postpartum depression were high among substance users compared to those who did not use. This might be due to women's thoughts towards homemade alcohol drinks and their low awareness on the effect of drinking during pregnancy, which implied that women need have adequate information concerning substance use especially homemade drinks before and during pregnancy period.

Moreover participants who faced domestic violence found to be significantly associated with the outcome variable [AOR 3.1(95% C.I 1.6,5.9)].which was in line with finding that showed strong relationship between the occurrence of abuse and risk of having it .Despite variability in definitions of abuse and methodology. In the present study domestic violence were typically physical and verbal (insulting) abuses. Hence from the respondents who were found to be depressed 14.1 % experienced domestic violence of which 39.1% were verbally abused. On a literature which identified eight studies revealed that there was a significant association between abuse and postpartum depression (55). In addition to that other studies which were conducted in western Canadian City (51), China (49), Chili(53) and Pakistan(52) stated that from all over the participants who were presented with symptom of postpartum mental health problem majority of them faced with some sort of intimate partner abuse before or during pregnancy. The finding was consistent with previous cohort study conducted in Iran (50) where women who were screened found to be positive for postnatal depression had been abused. This might be due to the fact that husband's might not have an insight about the extent of domestic violence like insulting in addition they also might not know the impact domestic violence have on pregnancy and the complication it could create. On the other hand this finding was in contrary to the study done in Nepal(54) where there were no significant association between any forms of violence and postpartum depression. The discrepancy in the findings was might be due to the perception of Nepalese women; they might think that violence by their partner as a normal incidence. So all this findings implies that Understanding the level of domestic violence and its complications is crucial and it needs concern.

On the present study 113(18.8%) of participants were unhappy by their marriage and discovered that women who had a deprived relationship with their partners had higher scores of postpartum depression [AOR2.7 (95% C.I 1.4, 5.2)]. Likewise studies carried out among mothers in Uganda

(13) and Iranian(45) were in agreement with the finding of this study, in which the loss of satisfaction in marriage would be the contributing factor for postpartum depression. Furthermore a literature reviewed from seventeen studies with a total of 19,132 Arab women concluded that unsatisfactory relationship was the significant risk factor for mental health problem in postpartum period (63). Constantly this problem was also highlighted by another literature review conducted among similar study subjects (23)**.** Review of different studies suggested that marital dissatisfaction was a worldwide issue which was also a factor causing depression. The reason for this dissatisfaction might be due to women's nature of over expectation in marriage. Beside that in the current study one third of the study participants were house wife who had housework burden furthermore it could be due to the shift of partner's love and care to the new born baby.

Another association found in this study was giving birth without the presence of any relatives in the health institutions, in which participants prevalence of postpartum depression significantly higher among who did not got the social support during labor and delivery [AOR 3.6(1.6,8.3)] than their respective reference group. This result was consistent with a study conducted among postnatal women in their first week after delivery in Bydgoszcz city of Poland (22). The finding confirm that the presence of any relatives specially husbands during labor and delivery was helpful to emotional support in addition to giving social support which marks the need to allow husbands in the labor ward.

7. Limitation of the study

Limitation of the study

- The study was limited to 6 weeks postpartum; the persistence of depression beyond those weeks' of postnatal months was not investigated.
- Using a cross-sectional study design which hinders the researcher from establishing cause and effect relationship between the possible determinant of postpartum depression and the outcome of interest.

8. Conclusion

Postpartum depression is a common mental health problem at the postpartum period, and its prevalence still continues in a significant proportion. This study found that 23.3% of respondents had postpartum depression which is significant high value. It also identifies the presumed risk factors. Socio-demographic factors like marital status and low economical status were associated with postpartum depression. Similarly women who had previous history of child death and substance use had a probability of being depressed at the post partum period. Unplanned pregnancy, previous personal history of depression and domestic violence were highly significant in this study. Unhappiness in marital relationship and child birth without the presence of any relatives were also among the factors which were identified. On the contrary there was no association between postpartum depression and educational status, occupational status, mode of delivery, satisfactory relationship with mother-in-low and desired sex of the newborn.

9. Recommendations

1. Ministry of health should prepare policies in integrating mental and reproductive health services and allowing partner support in the labor room.
2. Women's affair office should create Inter sector collaboration with health institutions for those women who had report of domestic violence during screening for postpartum depression and child death.
3. Family guidance should Creat further awareness about unplanned pregnancy and marriage counseling among the community using different mass Medias.
4. Accredited training providers should give a continuous training for all health care providers specially nurses, midwife, and health officers to be able to modify client care
5. Health care providers should give attention and performing regular preventive screening during antenatal and postnatal follow-ups for those women who had a history of mental health problems, negative life events and give education for clients concerning negative outcome of substance use during pregnancy.
6. Religious institutions, society leaders and parents should increase perception on the impact of divorce among the society.
7. Government should enable women to work in collaboration to be self sufficient and financially stable.
8. Further research on postpartum depression using different study design, set up and sample size in order to investigate future some of the risk factors that were found to be associated with postpartum depression.

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ANNEXES

ANNEX I INFORMATION SHEET

INFORMATION SHEET

Hello: my name is_____ and I am a MSC student at Addis Ababa University College of health science department of nursing and midwifery and am conducting a research by the mentioned university on the prevalence and associated factors of postpartum depression .The research is aimed to help the government and the city health office beside that community including the people who participate in the study and will introduce no risk to the participants .the questioner may take a maximum of20 minutes . I need to get your consent to participate on this study; since its entirely based on your volunteer and you can quite from the study at any time you want. You will not have any penalty if you fail to show desire to participate. I however, do hope that you will participate in the study since the data that will come from you will be important for us. Your name will not be written anywhere in the questionnaire. I would like to inform you that all information you give as is Confidential. Except for the purpose of the study it will never be disclosed to the third party. If you have any question regard to this study, you can ask immediately the interviewer or the investigator by using the contact address here under.

May I know begin the interview?

If yes, continue interviewing

If no, thanks and stop interviewing.

Name of the interviewer _____ sign _____ date

Addresses

Tell; 0913017124 Email addishiwet.f@gmail.com

ANNEX II CONSEN FORM

CONCENT FORM

I (the respondent),the undersigned , am told that the researcher is going to conduct the study in different health centers to determine the prevalence and associated factors of postpartum depression am also informed that the result of the study will be used by both the government and the city health office to commence appropriate strategies to bring a change. I am, too, told the the research will benefit the community in general including me, the respondent, and that the research will not inflict any harm to me. I have been told that I have full right I have enough time to understand and then take part in the study on the basis of my interest besides; I am briefed that I will be interviewed for not more than 20 minutes. And he/she let me know that I was selected randomly by the investigator. Moreover am notified that my participation in the study is entirely volunteer, and that I can quite from the study any time I want. Likewise am enlighten that I will not be subject to any form of punishment following my failure to participate in the study. In the same way am explained that the information collected will not be disclosed by any means to any people other than those participating in the study unless obtained permission from me. Equally, am told that I can ask them question I found difficulty or any type otherwise.

Name of the interviewee_____sign _____date

Addresses

Tell; 0913017124

Email addishiwet.f@gmail.com

ANNEX III QUESTIONNAIRE FORM; ENGLISH VERSION

Questions related to Prevalence and associated factors of postpartum depression among postpartum women

Date _____ Questioner code 001

Date of delivery _____

Part 1 socio-demographic characteristics			
No	**Questions**	**Coding category**	**Skip**
101	Residence?	a. Urban----------1 b. Rural----------2	
102	Age in completed years?		
103	Religious background?	a. Christian orthodox ----------1 b. Catholic.----------2 c. Protestant----------3 d. Muslim----------4 e. Others-specify----------5	
104	Follow any religious/cultural rituals?	a. yes ----------1 b. no----------2 →	If your response for no 104 is "B" skip to no 106
105	What kind of religious/cultural rituals do you follow?		
106	Current marital status?	a. Single----------1.	

		b. Married.----------2 c. Divorced/separated.----------3 d. Widowed.----------4 e. cohabiting----------5	
107	Have you ever attended school?	a. yes----------1 b. no ----------2 →	If your response for no 107 is "B" skip to no 109
108	Highest level of schooling you attended?	a. Primary school (1-8----------1 b. Secondary school(9-12----------2 c. Technical/vocational.----------3 d. Diploma ----------4 d. First degree and above----------5	
109	Occupational status?	a. Student----------1 b. paid worker ----------2 c. unpaid employee----------3 d. House wife----------4 e. merchant----------5 f. pensioner----------6 g. farmer----------7 h. unemployed----------8 i. Others-specify ----------9	If your response for no 109 is "B" go to no 110 but if without "B" skip to no 111
110	If you are paid worker what is your occupational condition?	a. civil servant----------1	

		b. non civil servant----------2 c. NGO employee----------3 d. daily laborer----------4 e. house maid----------5 f. Others-specify----------6	
111	Husband's occupational status?	a. Student----------1 b. merchant----------2 c. civil servant----------3 d. non civil servant----------4 e. Unemployed.----------5 f. day laborer----------6 g. others specify ----------7	
112	Do you Work at the post partum period?	a. yes----------1 b. no----------2	
113	Difficult to manage within income?	a. yes----------1 b. no----------2	
114	On average the amount of monthly income?	a. < 445 birr ----------1 b. 446-1200----------2 c.1201-2500----------3 d.2501-3500----------4 e.>3501----------5 f. I don't know----------6 g. I don't have my own income-------7	
115.1	Sex of your last baby?	a. male ----------1	

		b. female ----------2	
115.2	Desired sex for the last baby?	a. Desired .----------1 b. Undesired .----------2 c. I don't mind ----------3	

PART 2 QUESTIONS ON OBSTETRICS FACTORS

No	Questions	Coding Category	Skip
201	Number of pregnant?		
202	Number of living children do you have?		
203	Have you ever had an abortion?	a. Yes----------1 b. No----------2	If your response for no 203 is "B" skip to no 205
204	Number of abortion you experienced?		
205	Have you ever experienced death of your baby?	a. Yes----------1 b. No **----------2**	
206	Did any of your children are hospitalized?	a. Yes ----------1 b. No----------2	
207	The mode of delivery for your last pregnancy was?	a. Vaginally.----------1 b. C/Section----------2 c. Instrumental delivery----------3	

208	Was your last pregnancy planned?	a. yes ----------1 b. no----------2	
209	Any illness/complication during your last pregnancy?	a. yes----------1 b. no----------2	
210	Was there any negative life event during your last pregnancy?	a. Yes----------1 b. No----------2 →	If your response for no 210 is "B" skip to no **301**
211	What kind of events do you experienced?		

Part 3 substance use

No	Questions	Coding Category	Skip
301	Have you ever used any kind of substance before pregnancy?	a. Yes----------1 b. no----------2 →	If your response for no 301 is "B" skip to no 303
302	If you ever used any kind of substance before pregnancy specify it?		
303	Did you use any kind of substance in your last pregnancy?	a. yes----------1 b. no----------2 →	If your response for no 303 is "B" skip to no 401
304	If you ever used any kind of substance in your last pregnancy specify it?		

PART 4 QUESTIONS ON PREVIOUS PSYCHIATRIC HISTORIES

No	Exposure variable	Coding category	Skip
401	Any of your relative suffered from mental illness?	a. Yes near relative ----------1 b. Yes distant relative ----------2 c. No----------3	
402	Previous history of depression?	a. yes ----------1 b. no----------2	

PART 5 QUESTIONS ON SOCIAL SUPPORT

No	Exposure variable	Coding	Skip
501	Have you ever experienced any abuse in your home?	a. Yes----------1 b. No----------2 → c. Others-specify----------3	If your response for no 501 is "B" skip to no 503
502	What kind of abuse do you ever experienced?	a. Verbal----------1 b. Physical----------2 c. Verbal and physical ----------3	
503	Are you satisfied with your marriage?	a. yes----------1 b. no----------2 c. more or less ----------3 d. Others-specify----------4	
504	Father of your child is supporting both of you enough?	a. yes.----------1 b. no----------2 c. more or less ----------3 d. Others-specify----------4	

505	Did any of your relatives present in health facilities during your last child birth?	a. yes----------1 b .no----------2	
506	Are you satisfied by the relationship you have with your mother-in-law?	a. yes----------1 b. no ----------2 c. more or less----------3 d. Others-specify----------4	

PART 6 Edinburgh Postnatal Depression Scale (EPDS) In the past 7 days

No	Question	Coding Category	Skip
601	In the past seven days have u ever experienced laugh and see the funny side of things?	1. As much as I always could---------1 2. Not quite so much now ----------2 3. Definitely not so much now--------3 4. Not at all----------4	
602	In the past seven days have u ever looked forward with enjoyment to things?	1. As much as I ever did ----------1 2. Rather less than I used to----------2 3. Definitely less than I used to-------3 4. Hardly at all----------4	
603	In the past seven days have you blamed yourself unnecessarily when things went wrong?	1. Yes, most of the time----------1 2. Yes, some of the time----------2 3. Not very often----------3 4.No, never ----------4	
604	In the past seven days have you ever been anxious or worried for no good reason?	1. No, not at all----------1 2. Hardly ever----------2 3. Yes, sometimes----------3 4. Yes, very often----------4	

605	In the past seven days have you felt scared or panicky for no very good reason?	1. Yes, quite a lot----------1 2. Yes, sometimes----------2 3. No, not much----------3 4. No, not at all ----------4	
606	In the past seven days things have been getting on top of you?	1. Yes, most of the time I haven't been able to cope at all ----------1 2. Yes, sometimes I haven't been coping as well as usual ----------2 3. No, most of the time I have coped quite well ----------3 4. No, I have been coping as well as ever----------4	
607	In the past seven days have you been so unhappy that you have had difficulty sleeping?	1. Yes, most of the time ----------1 2. Yes, sometimes ----------2 3. Not very often ----------3 4. No, not at all----------4	
608	In the past seven days have you felt sad or miserable?	1. Yes, most of the time ----------1 2. Yes, quite often----------2 3. Not very often----------3 4. No, not at all----------4	
609	In the past seven days have you been so unhappy that you have been crying?	1. Yes, most of the time----------1 2. Yes, quite often----------2 3. Only occasionally----------3 4. No, never----------4	
610	In the past seven days did you have the thought of harming yourself?	1. Yes, quite often----------1 2. Sometimes ----------2 3. Hardly ever----------3 4.4.Never----------4	

ANNEX IV AMHARIC VERSION OF INFORMATION SHEET
የመረጃ ገለፃና ማብራሪያ

ጤናይስጥልኝእኔ.....እባላለሁ፡፡

በአዲስ አበባ ዩኒቨርስቲ ህክምና ፋኩሊቲ በነርስና አዋላጅ የትምህርት ክፍል በእናቶች ጤናና ተዋልዶ የሁለተኛ አመት የማስተርስ ዲግሪ ተማሪ ስሆን በዚህ ጤና ጣቢያ የሚገኙ እናቶች ከወሊድ በኋላ የሚያጋጥማቸውን የድብር ምልክቶች በተመለከተ ጥናት እያደረኩ እገኛለሁ፡ ከዚህ ጥናት የሚገኙት መረጃዎች ለመንግስትና ለዚህ ከተማ የጤና ቢሮ በሽታውን ለመግታት አስፈላጊ የሆኑ ዕቅዶችን ናስልቶችን ለመንደፍ ጥቅምላይ ይውላል፡፡ ስለሆነም በዚህ ጥናት ውስጥ የሚሳተፉና መላው ማህበረሰብ ወሊድን ተከትሎ የሚመጡ የአእምሮ መታወክ በሽታዎች እንዳይጠቁ ያደርጋል፡፡ በዚህ ጥናት ውስጥ መሳተፍ ቀጥተኛ የሆነ ጥቅማ የሌለ ሲሆን ጥናት ውስጥ በመሳተፍ የሚመጣ ምንም አይነት ችግር ወይም ጉዳ ግን የለውም፡፡ የጥናቱ መጠይቅ ቢበዛ 20 ደቂቃ ይወስዳል፡፡ ጥናቱ ውስጥ ሊሳተፉ የሚችሉት በተመራማሪው አማካኝነት ከጠቅላላው በእጣ የተለዩ ናቸው፡፡ ጥናቱ ውስጥ መሳተፍ የሚፈልጉ እናቶች በፈቃደኝነት ላይ ብቻ የተመሰረተ ተሳትፎ መሆኑን መገንዘብ አለባቸው፡፡ ባለመሳተፎ ምክኒያት የሚመጣ ምንም አይነት ቅጣት የለውም፤ ነገር ግን ከእርሶ የምናገኘውን መረጃ አስፈላጊ ስለሆነ ጥናት ውስጥ እንደሚሳተፉ ተስፋ አደርጋለሁ፡፡ ከእርስዎ የምናገኘው ማንኛውም አይነት መረጃ ከእኛ ጥናት ውስጥ ከምንሳተፈው ሰዎች ውጪ ለማንኛውም ሶስተኛ ወገን እንደማይደርስ እና ምስጢራዊነቱ የተጠበቀ እንደሚሆን ላረጋግጥላችሁ እወዳለሁ፡፡ መጠየቅ ለሚፈልጉት ማንኛውም አይነት ጥያቄ የሚከተለውን አድራሻ መጠቀም ይችላሉ፡፡ አሁንቃለመጠይቁን መጀመር እችላለሁኝ?

አዎ ካሉ መጠይቁን ይቀጥሉ አይሆንም ካሉ ደግሞ ያመስግኑና መጠይቁን ያቁሙ

ቃለመጠይቁንየ ሚያደርገው ሰው ስም ----------ፊርማ---------ቀን----------

የተቆጣጣሪው ስም----------ፊርማ ----------ቀን----------

አድራሻ ስልክ 0913017124 Email addishiwet.f@gmail.com

ANNEX V CONSENT FORM

የፈቃደኝነ ትመጠየቂያ ፎርም

እኔ.....(ቃለ መጠይቁ የሚደረግልኝ) በዚህ ጤና ጣቢያ ውስጥ ከወሊድ በኋላ ክትትል የሚያደርጉ እናቶች ላይ ከድህረወሊድ ጋር ተያይዞ የሚመጡ የድብርት ስሜቶች ምልክቶች ላይ የሚካሄደውን ጥናት ዋና አላማና የሚያስከትለውን ጉዳት፣ ከእኔ የሚወጣው መረጃ ከተመራማሪዎች ለማንም እንደማይተላለፍ፣ ጥናት ውስጥ በመሳተፍ ቀጥተኛ የሆነ ጥቅማጥቅም የሌለው፣ እኔ የምሰጠው መረጃ ለመኝግስትና ለከተማው ጤና ቢሮ አስፈላጊ መሆኑን፣ እኔ የተመረጥኩት በእጣ አማካኝነት መሆኑን፣ ጥናት ውስጥ መሳተፍ ያለብኝ በእኔፈቃደንነት ብቻ የተመሰረተ እንደሆነ፣ ጥናት ውስጥ መግባት ባለመቻሌ ምንም አይነት ቅጣት እንደሌለው ከጥናቱ በማንኛውም ሰኣት ማቋረር እንደምችል፣ መጠይቁን ለማጠናቀቅ ቢበዛ 20 ደቂቃ እንደሚወስድና ማንኛውም አይነት ጥያቄ መጠየቅ እንደምችል በሚገባ ከተነገረኝ በኋላ በዚህ ጥናት ውስጥ በፍቃደኝነ ትመሳተፌን በፊርማዬ አረጋግጣለሁ።።

ቃለመጠይቁ የተደረገለት ሰው ስም ----------

ፊርማ ----------

ቀን ----------

አድራሻ ስልክ 0913017124

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ANNEX VI AMHARIC VERSION QUESTIONNAIRE

ቃለ መጠይቅ

የመጠይቅ መለያ ቁጥር----------
መጠይቁ የተሰጠበት ቀን----------

መመሪያ ለቀጣዮቹ ጥያቄዎች ተገቢውን ምላሽ ይምረጡ

ክፍል 1 ማህበራዊና የኂላ ታሪክ ባህሪ ላይ የሚያጠነጥኑ ጥያቄዎች

ተ.ቁ	ጥያቄ	መለያ ቁጥር	እለፍ/ፊ
101	መኖሪያ አድራሻ?	ሀ. ከተማ----------1 ለ. ገጠር----------2	
102	በሙሉ ቁጥር ዕድሜዎ ምን ያህል ነው?	_____	
103	ሃይማኖቶ ምንድን ነው?	ሀ. ኦርቶዶክስ ክርስቲያን----------1 ለ. ካቶሊክ----------2 ሐ ፕሮቴስታንት----------3 መ. ሙስሊም----------4 ሠ ሌላ ካለ ይግለፁ ----------	
104	የሚከተሉት ሐይማኖታዊ / ባህላዊ ስርአቶች አሉ?	ሀ አዎ አለ ----------1 ለ የለም ----------2	ለተራ ቁጥር 104 መልሶ "ለ" ከሆነ ወደ ጥያቄ ቁጥር 106 ይለፉ
105	የሚከተሉትን ሐይማኖታዊ / ባህላዊ ስርአት ካለ ይግለፁ?		
106	የጋብቻ ሁኔታ?	ሀ. ያላገባ----------1. .ለ ያገባ----------2 ሐ የፈታ/ የተለያየ.----------3 .መ ባለቤቶ የሞተቦት----------4 ሠ በጋራ እየኖሩ----------5	
107	መደበኛ ትምህርት ተምረው ያውቃሉ?	ሀ. አውቃለሁ----------1 ለ.አላውቅም----------2	ለተራ ቁጥር 107 መልሶ "ለ" ከሆነ ወደ ጥያቄ ቁጥር 109 ይለፉ
108	ያጠናቀቁት ከፍትኛ የትምህርት ደረጃ?	ሀ.የመጀመሪያ ደረጃ ትምህርት (1-8)----1 ለ.ሁለተኛ ደረጃ ትምህርት(9-12)---------2 ሐ የቴክኒክና ሙያ ስልጠና----------3 መ. ዲፕሎማ----------4 ሠ.የመጀመሪያ ዲግሪና ከዛ በላይ---------5	

109	የስራ ሁኔታሽ?	ሀ.ተማሪ----------1 ለ ተከፋይ ሰራተኛ----------2 ሐ. የማይከፈለው ሰራተኛ----------3 መ. የቤት እመቤት----------4 ሠ. ነጋዴ----------5 ረ. ጡረተኛ----------6 ሰ. ገበሬ----------7 ሸ. ስራ የሌለው----------8 ቁ ሌላ ካለ ይግለፁ ----------9	ለተራ ቁጥር 109 መልሶ "ለ" ከሆነ ወደ ጥያቄ ቁጥር 110 ይለፉ ከ "ለ" ውጪ ከሆነ ግን ወደ 111
110	ተከፋይ ሰራተኛ ከሆኑ የስራ ዘርፎ ምንድንነው ?	ሀ.የመንግስት ሰራተኛ----------1 ሀ.የመንግስት ሰራተኛ----------2 ሐ. የግብረ ሰናይ ድርጅት ተቀጣሪ---------3 መ.የቀን ሰራተኛ----------4 ሠ.የቤት ሰራተኛ----------5 መ. ሌላ ካለ ይግለፁ----------	
111	የባለቤትዎ የስራ ሁኔታ ምንድን ነው?	ሀ.ተማሪ----------1 ለ.ነጋዴ----------2 ሐ የመንግስት ሰራተኛ----------3 መ የመንግስት ሰራተኛ----------4 ሠ ስራ የለውም----------5 ረ.የቀን ሰራተኛ----------6 ሰ. ሌላ ካለ ይግለፁ----------6	
112	ከወሊድ በኋላ ስራ ይሰራሉ?	ሀ.እሰራለሁ----------1 ለ.አልሰራም----------2	
113	ያሎት የገቢ መጠን ቤቶን ለመምራት አስችግሮታል?	ሀ.አዎ----------1 ለ አያስችግረኝም----------2	
114	በአማካይ በወር ያሎት የገቢ መጠን በብር ስንት ነው?	ሀ. <445----------1 ለ. 446-1200----------2 ሐ.1201-2500----------3 መ.2501-3500----------4 ሠ.>3501----------5 ረ አላውቅም----------6 ሰ የራሴ ገቢ የለኝም----------7	
115 .1	የመጨረሻ ልጅዎ ፆታ ምንድን ነው?	ሀ.ወንድ----------1 ለ. ሴት----------2	

115 .2	የተወለደው የልጅም ፆታ ምን ነበር?	ሀ.የተፈለገው ነው----------1 ለ.ያልተፈለገው ነው----------2 ሐ. ምንም አይመስለኝም----------3	

ክፍል ሁለት የወሊድ ሁኔታ ላይ የሚያጠነጥን መጠይቆች

ተ.ቁ	ጥያቄ	መለያ ቁጥር	እለፍ/ፊ
201	ስንት ጊዜ አርግዘው ያውቃሉ?	_____ጊዜ	
202	ከወለዱት ልጆች ውስጥ ምን ያህሉ በህይወት አሉ?		
203	ውርጃ አጋጥሞት ያውቃል ?	ሀ. ያውቃል----------1 ለ. አያውቅም----------2	
204	ውርጃ አጋጥሞት የሚያውቅ ከሆነ ለስንት ጊዜ?	_____ጊዜ	
205	ከዚህ ቀደም የወለዱት ልጅ ሞቶበት ያውቃል ?	ሀ. አዎ ያውቃል----------1 ለ. አያውቅም----------2	
206	ልጆችዎ በማንኛውም ህመም ምክኒያት ሆስፒታል ለህክምና ተኝቶብሽ ያውቃሉ?	ሀ. አዎ ያውቃል----------1 ለ. አያውቅም----------2	
207	የመጨረሻ ጊዜ ልጆውን የወለዱት እንዴት ነበር?	ሀ. በመሃፀን----------1 ለ በኦፕሬሽን----------2 ሐ በመሃፀን ሆኖ በመሳሪያ--------3	
208	የመጨረሻ ጊዜ እርግዝናውን አቅደው ነው ያረገዙት?	ሀ. አዎ----------1 ለ.አይደለም----------2	
209	በመጨረሻ እርግዝናዎ ወቅት የጤና መታወክ ወይም ከእርግዝናው ጋር ተያይዞ የመጣ የጤና መወሳሰብ ችግሮች ነበሩ?	ሀ. አዎ----------1 ለ. አልነበሩም----------2	
210	በበመጨረሻ እርግዝረናዎ ወቅት መጥፎ ሁኔታዎች አጋጥሞት ነበር?	ሀ. አዎ ነበር----------1 ለ.አልነበረም----------2	ለተራ ቁጥር 210 መልሶ "ለ" ከሆነ ወደ ጥያቄ ቁጥር 301 ይለፉ
211	ያጋጠሞት መጥፎ ሁኔታ ቢገልፁልን?		

ክፍል 3 የአደገኛ እፅን የተመለከቱ ጥያቄዎች

ተ.ቁ	ጥያቄ	መለያ ቁጥር	እለፍ/ፊ
301	ከማርገዞ በፊት የአልኮል መጠጥ፣ ሲጋራ ወይም አደንዛዥ ዕፅ ተጠቅመው ያውቃሉ?	ሀ. አውቃለሁ----------1 ለ. አላውቅም----------2	ለተራ ቁጥር 301 መልሶ "ለ" ከሆነ ወደ ጥያቄ ቁጥር 303 ይለፉ
302	ከማርገዞ በፊት የአልኮል መጠጥ፣ ሲጋራ ወይም አደንዛዥ ዕፅ ተጠቅመው የሚያውቁ ከሆነ የተተቀሙትን አይነት ይግለፁ?		
303	በመጨረሻ የዕርግዝናዎ ወቅት የአልኮል መጠጥ፣ ሲጋራ ወይም አደንዛዥ ዕፅ ተጠቅመዋል?	ሀ. ተጠቅሚያለው----------1 ለ. አልተጠቀምኩም----------2	ለተራ ቁጥር 303 መልሶ "ለ" ከሆነ ወደ ጥያቄ ቁጥር 401 ይለፉ
304	በመጨረሻ የዕርግዝናዎ ወቅት የአልኮል መጠጥ፣ ሲጋራ ወይም አደንዛዥ ዕፅ ከተጠቀሙ ምን እንደሆነ ይግለፁ?		

ክፍል 4 የቀድሞ የግልና የቤተሰብ የስነ አምሮ ጤና ሁኔታ

ተ .ቁ	ጥያቄ	መለያ ቁጥር	እለፍ/ፊ
401	በቤተሰቦ ውስጥ የአምሮ በሽታ ያጋጠመው ሰው ነበር?	ሀ. አዎ የቅርብ ቤተሰብ----------1 ለ. አዎ የሩቅ ቤተሰብ----------2 ሐ አልነበረም----------3	
402	ከዚህ ቀደም የድብርት ችግር አጋጥሞት ያውቃል?	ሀ. አዎ----------1 ለ. አያውቅም----------2	

ክፍል 5 የማሃበረሰብ እገዛ ላይ የሚያጠነጥኑ መጠይቆች

ተ.ቁ	ጥያቄ	መለያ ቁጥር	እለፍ/ፊ
501	በቤትዎ በባለቤቶ ጥቃት ደርሶቦት ያውቃል?	ሀ. አዎ----------1 ለ. አያውቅም----------2 ሐ. ሌላ ካለ ይግለፁ----------	ለተራ ቁጥር 501 መልሶ "ለ" ከሆነ ወደ ጥያቄ ቁጥር 503 ይለፉ
502	ያጋጠሞት የጥቃት ሁኔታ ምን ነበር?	ሀ. የቃላት /ስድብ----------1 ለ. የአካል /ድብደባ----------2 ሐ. የቃላትና የአካል ጥቃት----------3	

503	በትዳሮ ደስተኛ ኖት ?	ሀ. አዎ----------1 ለ. አይደለሁም ----------2 ሐ. ከሞላጎደል----------3 መ.ሌላ ካለ ይግለፁ----------	
504	የልጆ አባት ለእርሶና ለልጆ ተገቢውን እገዛ አድርገዋል ብለው ያስባሉ?	ሀ. አዎ----------1 ለ አይደለም----------2 ሐ. ከሞላጎደል----------3 መ.ሌላ ካለ ይግለፁ----------	
505	በወሊድ ወቅት ከቤተሰብ አባላት መሃከል በወሊድ ቦታ የተገኘ ሰው ነበር?	ሀ. አዎ ነበር----------1 ለ አልነበረም----------2	
506	ከባሎ ቤተሰብ ጋር ባሎት ግንኙነት ደስተኛ ኖት?	ሀ. አዎ----------1 ለ አይደለሁም----------2 ሐ. ከሞላጎደል----------3 መ.ሌላ ካለ ይግለፁ----------	

ክፍል 6 የአማርኛ ትርጉም ለ EPDS

ተ.ቁ	ጥያቄ	መለያ ቁጥር	እለፍ/ፊ
601	ባለፉት ሰባት ቀናቶች ውስጥ መሳቅና የነገሮችን አስዳሳች ጎን ማይት ችለዋል?	ሀ. ሁሌ የምችለውን ያህል----------1 ለ. አሁን በጣም ብዙም አይደለም-----2 ሐ. በእርግጥ አሁን ብዙም አይደለም--3 መ. በጭራሽ አይደለም----------4	
602	ባለፉት ሰባት ቀናቶች ውስጥ ነገሮቸችን ወደፊት በደስታ ያዩ ነበር?	ሀ. አዎ ሁሌም እንደማደርገው---------1 ለ. በፊት ከማደርገው ያነሰ----------2 ሐ. በእርግጥ በፊት ከማደርገው ያነሰ--3 መ. በአጠቃላይ ከባድ ነው----------4	
603	ባለፉት ሰባት ቀናቶች ውስጥ ነገሮች ወደ አላስፈላጊ ሁኔታ ሲያመሩ ያለምክንያት እራስዎን ወቅሰዋል ?	ሀ. አዎ ብዙውን ጊዜ----------1 ለ. አዎ አንዳንዴ----------2 ሐ. ብዙ ጊዜ አይደለም----------3 መ. አይደለም መቼም ሆኖ አያውቅም--4	
604	ባለፉት ሰባት ቀናቶች ውስጥ ያለምንም በቂ ምክንያት ተሸብረው ወይም ተጨንቀው ያውቃሉ?	ሀ. አይደለም መቼም ሆኖ አያውቅም--1 ለ. እምብዛም----------2 ሐ. አዎ አንዳንዴ----------3 መ. አዎ በጣም ብዙ ጊዜ---------4	
605	ባለፉት ሰባት ቀናቶች ውስጥ ያለምንም በቂ ምክንያት የፍርሀትና የድንጋጤ ስሜት ተሰምቶት ያውቃል?	ሀ. አዎ በጣም ብዙ ጊዜ----------1 ለ. አዎ አንዳንዴ----------2 ሐ. አይደለም ብዙ ጊዜ አይሰማኝም--3 መ. አይደለም በጭራሽ አይሰማኝም--4	

606	ባለፉት ሰባት ቀናቶች ውስጥ ነገሮች ከቁጥጥርዎ ውጭ ሆነውቦት ያውቃል?	ሀ. አዎ ብዙ ጊዜ ነገሮችን በአጠቃላይ በቋቋም አልችልም----------1 ለ. አዎ ልክ እንደ ብዙ ጊዜ አንዳንድ ነገሮችን መቋቋም አልችልም---2 ሐ. አይደለም ብዙ ጊዜ በጥሩ ሆኔታ ነገሮችን እቋቋማለሁ----------3 መ. አይደለም ልክ እንደበፊቱ በጥሩ ሁኔታ ነገሮችን እቋቋማለሁ---4	
607	ባለፉት ሰባት ቀናቶች ውስጥ በጣም ደስተኛ ባለመሆንዎ እንቅልፍ እምቢ ብሎዎት ያውቃል ?	ሀ. አዎ በጣም ብዙውን ጊዜ-----1 ለ. አዎ ብዙውን ጊዜ----------2 ሐ. በጣም ብዙ ጊዜ አይደለም---3 መ. በጭራሽ አይደለም----------4	
608	ባለፉት ሰባት ቀናቶች ውስጥ የሀዘንና የብስጭት ስሜት ተሰምቶት ያውቃል?	ሀ. አዎ በጣም ብዙውን ጊዜ------1 ለ. ኦዎ ብዙውን ጊዜ----------2 ሐ. በጣም ብዙ ጊዜ አይደለም----3 መ. በጭራሽ አይደለም----------4	
609	ባለፉት ሰባት ቀናቶች ውስጥ በጣም ከማዘንዎት የተነሳ አልቅሰው ያውቃሉ?	ሀ. አዎ አብዛኛው ንጊዜ----------1 ለ. አዎ ብዙ ጊዜ----------2 ሐ. አልፎ አልፎ ብቻ----------3 መ. መቼም አይደለም----------4	
610	ባለፉት ሰባት ቀናቶች ውስጥ እራስዎን ለመጉዳት አስበው ያውቃሉ?	ሀ. በጣም ብዙ ጊዜ----------1 ለ. አንዳንዴ----------2 ሐ. እምብዛም----------3 መ. በጭራሽ መቼም----------4	

ANNEX VI DECLARATION

I, the undersigned, declare that this thesis is my original work and has not been presented for a degree in this or another university and that all sources of materials used for this thesis have been duly acknowledged.

Name of student: Addishiwet Fantahun

Signature: _____

Place: Addis Ababa University, Ethiopia

Date of submission:_____

This thesis work has been submitted for examination with my approval as a university advisor.

Name of advisor: Dr Amsale Cherie

Signature: _____

Date: _____