ADDIS ABABA UNIVERSITY
COLLEGE OF HEALTH SCIENCE
SCHOOL OF NURSING AND MIDWIFERY
DEPARTMENT OF NURSING

PREVALENCE AND ASSOCIATED FACTORSOF SUICIDAL BEHAVIOR AMONG POSTPARTUM MOTHERS ATTENDING AT PUBLIC HEALTH CENTERS OF ADDIS ABABA, ETHIOPIA, 2021.

PRINCIPAL INVESTIGATOR: SELAMAWIT TILAHUN (BSC)

ATHESIS SUBMITTED POST GRADUATE STUDENT ADDIS ABEBA UNIVERSITY, COLLEGE OF HEALTH SCIENCE, DEPARTMENT OF NURSING, SCHOOL OF NURSING AND MIDWIFERY FOR PARTIAL FULFILLMENT OF THE REQUIREMENTS OF THE DEGREE OF MASTERS OF SCIENCE IN NEONATAL NURSING.

MAY, 2021
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A THESIS SUBMITTED TO POST GRADUATE STUDENT ADDIS ABEBA UNIVERSITY,COLLEGE OF HEALTH SCIENCE, DEPARTMENT OF NURSING, SCHOOL OF NURSING AND MIDWIFERY FOR PARTIAL FULFILLMENT OF THE REQUIREMENTS OF THE DEGREE OF MASTERS OF SCIENCE IN NEONATAL NURSING.

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APPROVAL SHEET

ADDS ABABA UNIVERSITY

COLLEGE OF HEALTH SCIENCE

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DEPARTMENT OF NURSING

I, the undersigned MSc student, declare that I have submitted my original work on a title Prevalence and associated factors of suicidal behaviour among postpartum mother attending at public health centre, Addis Ababa, Ethiopia for the examination.

Submitted by:

Selamawit Tilahun_____ _____

Name of student Signature Date

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

Approved by:

1. _____ _____ _____

Name of Major Advisor Signature Date

2. _____ _____ _____

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APPROVAL BY THE BOARD OF EXAMINATION

This thesis by **SelamawitTilahun**is accepted in its present form by the board of examiners assatisfying thesis requirement for the degree of master's in neonatal nursing.

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ABBREVIATION AND ACRONYMS

CI	Confidence interval
COD	Crude odds ratio
GAD	Generalized anxiety disorder
HIV	Human immune virus
OCD	Obsessive compulsive disorder
OR	Odds ratio
PPD	Postpartum depression
PTSD	Posttraumatic stress disorder
STI	Sexually transmitted infection

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ABSTRACT

Background- Suicidal behaviors are one of the most common global burden of disease among women, with the exception of this in middle and low income countries few is studied about the frequency and associated factors. Suicidal behavior increase during the first year after delivery varying from 4% to 17.6% with three fold cause of maternal death in low-in- come countries.Correspondingly in Ethiopia suicidal behavior found to be high 14% among postpartum mothers. Suicidal behavior involves the deliberate attempt to take one's own life.

Objective - To assessprevalence and associated factorsof suicidal behavior among postpartum mothers attending at public health centers of Addis Ababa, Ethiopia, 2021.

Methodology-A facility -based cross sectional study was conducted. The total sample size was 615.The study was conducted in ten randomly selected public health centers of Addis Ababa. After data collection, filled data were enter in statistical software Epi data 4.6 and were subjected to cleaning using simple frequency and tabulation to ensure its validity. Then, the analysis was done SPSS version 25 statistical software using a CI of 95%. To indicate the strength and statistical significance of the association of the selected independent and dependent variables, odds ratio,95% CI and p-value < 0.05were used.

Results: The prevalence ofsuicidal behavioramong postnatal mothers attending at public health centers in Addis Ababa was 41.46%. Being mothers literate were (AOR=0.64, 95% CI: 0.42-0.97), verbal abuses were (AOR=2.18, 95% CI: 1.38-3.44), history of rape (AOR=3.03, 95% CI 1.14 -8.05),history of depression (AOR=4.12, 95% CI 1.21-14.03), women's having sexually unfaithful husband were (AOR=0.34, 95% CI 0.14-0.81) and khat chewing were (AOR=8.48, 95% CI 2.52-28.50) were significantly associated with suicidal behavior.

Conclusion and recommendation: Suicidal behavior was found to be the common mental health problem among postpartum women and was associated with educational status,verbal abuses, history of rape, history of depression, women's having sexually unfaithful husband and khat chewing. Also recommend early diagnosis and intervention with possible screening of mothers for suicidal behavior during routine antenatal and postnatal care.

Keywords: suicidal behavior, risk factor, postpartum mothers

1. INTRODUCTION

1.1 Background

The word suicide was first described by Thomas Browne physician and philosopher in the 17th century derived from Latin word Sui (of self) and caedere (to kill).The definition of suicide has changed throughout history shaping the definition to what is currently defined as suicide, as it is an outcome of behavior, the agency of the act, the intention to die or stop living in order to achieve a different level. Suicidal behavior don't always result in death, but are related to the process or feeling of self-inflicted death (1). When thinking about the different clinical terms, where by the clinician can recognize suicidal behavior as a form of coping with or responding to different internal or external factors. The center of this definition is on the appearance or non-appearance of suicidal intention and terms used to describe these cognition, emotion and behavior(2).

Suicidal behavior can be grouped as suicidal ideation, suicide attempt and completed suicide. Suicidal ideation considered as the precursor of suicide, is frequent thoughts of ending one's life and feelings that are often associated with suicidal behavior like that of developing a suicide plan, preoccupation with thoughts of death, Suicide attempts also considered as predictor for subsequent completed suicide ,istrying to kill one's self, other classification completed suicide is where the exact death occurs(3)as a final solution to obtain release or escape often from psychological pain(4).

All suicidal behaviors are own initiative as the classificationdescribe, these behaviors canbe different depending on both existence and absenteeism of aim to die and physical injury sustained. If death doesn't occur, the name self-harm is used like self-injury or self-cutting in the maintenance of emotion adjustment.Currently the theory is concerned with behaviors, thinking and planning that involve some degree of aim to die, in such case the name suicidal behavior can be used rather than suicide-related behaviors (5).

Most suicidal individuals have at least one psychiatric disorder, and 20% to 30% have made a previous suicide attempt with the intense feeling of cognitive rigidity, aggression, and impulsivity, feelings of hopelessness, neuroticism, anxiety and vulnerabilities towards

psychosis proneness, depression, or self-destructive behaviors which aggravates suicidal behavior(3,6).

Of course men and women are biologically different, moreover they differ in their status, power, roles and responsibilities which can seem reasonable in variation in suicidal behavior (7).Even though women's are diagnosed with suicidal behavior more than men, one common finding in suicide study is men are those who complete their attempts than women. Furthermore thereis consideration suicidal behavior in women as non-serious even there are evidence of attempt to die hospitalization, but it is considered as attention seeking act.(8,9).The onset of mental disorders which result in suicide is associated with stressful life events. Significant changes such as the birth of child may be related to the brain's stress response and can cause postpartum depression (PPD) (10)counting as one of the cause of suicidal behavior. There is substantial evidence that a prior suicide attempt can increase risk for subsequent death more than 30-fold. This seems to be especially true during the years immediately following the initial attempt(11) Similarly, suicide ideation with high intent has been found to be a distal predictor of later suicide death(5).

Professionals from health care facilities need to acquire a better understanding of the terminologies of suicidal behavior and self-injury which will ultimately improve risk assessment, prediction and prevention of suicidal behavior in women.(12).

1.2 Statement of the problem

One of the global public health problem is suicide. Worldwide nearly one million individuals die by suicide, 10–20 million thought about suicide and 50–120 million are affected by the suicide or attempted suicide of a family member. Of this Asia accounts for 60% of the world's suicides, so at least 60 million people are affected by suicide or attempted suicide in Asia each year(13)

In women, suicidal behaviors are among the major contributors to the global burden of disease(14).Maternal suicides occurred at a rate of one per 92,982 live births, and the annual suicide rate in women who were or had recently been pregnant varied from zero to 0.2 per 100,000, compared with 3.1-5.2 in the female population as a whole(15). A study conducted in North Central Province found that 17.8% of recorded maternal deaths were due to suicide, ranking it number one among causes of maternal deaths(16).In low income countries the prevalence of suicidal behavior among mothers vary for instance in Tanzania prevalence were 29% lifetime suicidal thought where in Peru province 0.8% difference(14). The occurrence of suicidal behavior is higher infirst year after delivery, varying from 4% to 17.6% (17–19).It causes maternal death which is three times more in low-in- come countries than in developed countries (20). Even so prevalence of suicidal behavior is high in low income countries like Ethiopia 14% (21) the community attitude is misrepresented. Not specific to women, suicidal behavior may be consideredas a sin among family members in Ethiopian culture. Furthermoremental illness were also a cause for stigma or disgrace because the community considered as supernatural forces(22).

Consistent with lower prevalence of suicide in pregnancy, found a high suicide rate among postpartum women in the first year post-delivery.Also consistent with the findings for suicides in pregnancy, more violent and lethal methods like that of jumping, self-incineration were much higher than expected in the postpartum population.Suicide was the second leading cause of death during the 43–365 day period postpartum(20). Finding indicates suicide as 10th leading cause of death in USA(13) .Moreover,suicide is the second leading cause of death in their reproductive age group.3.9% of United states women report to havesuicidalideations or

thoughts (23) .studies showed that self-reported suicidal ideation is significantly associated with an increased risk for suicide attempt or death (24).All maternal suicides, in both pregnancy and postnatal, during a study conducted in Minnesota, 14 maternal suicides of which 10 occurred in postnatal period.

In women having psychological disturbance during pregnancy and in postnatal period have an increased risk for suicidal behavior (25–27) as a result suicidal behavior is the leading cause of death among mothers with psycho pathological disorders(28,29). The rate of psychotic and non-psychotic affective morbidity in postnatal women is high. While in pregnant women non-psychotic emotional disorders are similarly common. As depressive illnesses are most closely linked to suicide, it follows that the rate of suicide in postnatal and, to a lesser extent pregnant, women should also be elevated. However, there is little in the research literature to address directly the risk of suicide or self-harm in women who are pregnant or in the postnatal period. Studies suggested that suicide was a more significant cause of maternal death(15). Anxiety, is often comorbid with depression(23) also found to be independently associate with suicidal thoughts and ideation (30).Studies that have examined postpartum suicidal behavior have found it to be associated with depression and tobe the leading cause of maternal death during the postpartum year (31,32). In addition to other major factors which leads to suicidal behavior like age(29)educational level(17)being born in low economic countries(20) domestic violence(14) marital status(33) having a baby who is hospitalized or loosening an infant(25)

Because women's higher vulnerability to psychosocial stresses during child birth are more likely than men to have suicidal ideation and attempts. Hence in terms of total burden of morbidity and mortality in combination the burden of female suicidal behavior is more than men.In addition to this, to our knowledge, few is known about the association of hormonal change after child bearing in post natal period, postpartum anxiety and depression, psychosocial and clinical factors with suicidal behavior in women.. There is need for more research on suicidal behavior in women, especially in developing countries. Therefore, the present study aims in assessing prevalence of suicidal behavior and its associated factors among postnatal women in public health centers in Addis Ababa.

1.3 significance of the study

Suicidal behavior is a common condition during the post-partum period and has different associated factors. Suicidal behavior is still high in low-income countries and it is a significant cause of maternal death in the post-partum period.As a result, to tackle this problem identifying the associated factors and giving attention to reducing this problem is helpful. In developing countries, there are also limited literature to address the risk of suicide or self-harm in women who are pregnant or in the postnatal period.

The findings of this study will have many advantages. For health care workers, it will increase the existing knowledge and skill towards the care of suicidal behavior among postpartum mothers. For health institutions, it will help design a new interventional project towards improving the care of postpartum mothers with suicidal behavior and it will helppolicymakers to give emphasis to the problem of suicidal behavior and to identify the factors associated with suicidal behavior. This study will also help as additional information for further studies on suicidal behavior.

2. LITERATURE REVIEW

2.1 Prevalence of suicidal behavior among post-partum mothers

Overall the Prevalence estimates of suicidal behaviors diverse by socio demographic factors, district, and country. Approximately 8.3 million adults aged ≥18 years in the United States 3.7% of the adult in U.S population reported having suicidal thoughts in the past year. The prevalence of having suicidal thoughts vary from 2.1% in Georgia to 6.8% in Utah. Suicidal thoughts and behaviors are main public health concerns in the United States. In following years on study done in USA, a total of 36,035 persons died as a resultof suicide, and nearly 666,000 individuals have been in hospital for nonfatal, self-inflicted injuries(23)

On study which was conducted in Finland,seventy-three suicides were identified during the postpartum period, with 30 (42%) occurring after live birth, 29 (40%) after abortion, and 14 (19%) after miscarriage. And two suicides go along with infanticide, twowith ectopic pregnancies and one with premature birth followed by neonatal death. The first two postpartum months were found to be a period of significantly higher risk than the third and fourth months. (11).In cross-sectional study results indicate that 41 .2% of women reported suicidal behavior in South Africa in the postnatal period(34) correspondingly on cross-sectional study conducted in Ethiopia prevalence of suicidal behavior was found to be 14.0% in postpartum mothers(21)

2.2 Socio demographic characteristics

In cross-sectional study conducted in Pelotas on 919 postpartum women the study Shows 11.5% prevalence of suicide risk in the postpartum period, with the demography: of the most part middle class (54.5%), aged 20 to 34years (69.9%) and low education levels (43.5%).Suicide risk remained associated with education level ($p< 0.001$), among the mothers enrolled in the study motherwho had not completed elementary school showed signs of suicidal risk when compared to the ones who had finished high school. Far from educational level age exhibit no association with suicidal behavior among postnatal mothers p-value 0.329 (17).

In contrast, Cross-sectional study conducted in 1,414Brazilian women, in which (6%) reject to participate. The mean age at involvement was 25 (±6.51) years old; 43.1% of subjects had not finished elementary school, 56.9% were grouped under the middle socioeconomic class, and 73.2% of subjects were married and live with a partner. The present pregnancy was not planned by 58.1% of women, and 9.7% thought about having an abortion. Out of the participant, 8.1% showed suicidal behavior, in the study 6.1% reported having thought of suicide, 4.6% from time to time, and 3.5% numerous times in the previous week. Among the women,12.0% with higher rate of suicidal ideation have never attended school or finished elementary school ($p = 0.000$); 12.7% of them belonged to the low socioeconomic class ($p = 0.000$); 12.6% of them were single, divorced or widows ($p = 0.000$); 9.5% had an unplanned pregnancy ($p = 0.027$); 26.4% of them had thoughts about abortion ($p = 0.000$) The adjusted analysis for logistic regression shows that the suicidal behavior was remarkably associated to low education ($p = 0.000$), low socioeconomic classification ($p = 0.016$), absence of a living with partner ($p = 0.003$) (24).

On Population representative cross-sectional household studyconducted in 13 small town more rural and urban sites in Brazil, Ethiopia, Japan, Namibia, Peru, Samoa, Serbia, Thailand and Tanzania. 20967 women aged 15-49 years were enrolled. In nearly all sites, lower educational accomplishment was not linked with increased odds of suicide attempts formerly other variables were considered, whereas younger age was still significant in about half of the sites. At any point being divorced/widowed/separated was related to enlarged probability of suicide attempts unrestrained of other factors (1). In United States prevalence of suicidal ideation, planning and suicidal attempts was significantly higher among young women age 18-29 (23) moreover in study conducted in India young women below 30 years are at higher risk of committing suicide(35)

In women having suicidal behavior, one of the most frequently identified observations is that being single might be never been in intimate relationship or engaged in relationship (26). Such results primarily comes from developed countries, which was based on different types of studies showing marital status has been an exposure variable (27)In contrast in developing countries studies shows there is reduced association between marital status and suicide behavior in women. For instance finding in China shows unmarried women were more likely to suicide than married women(29).Additionally in India a report of data come to an end that

marital status, family and social integration was not anticipating or protective factor for women (29).

In cross-sectional study conducted in Ethiopia with majority of age group was between 26-34 years and with response rate of 92.8% among them 13.8% have suicidal behavior, p (0.95) showing age have no association with suicidal behavior. On education status illiterate (19.6%) have association with suicidal behavior p(0.025). other socio demographic marital status, job, grew up with, relative wealth, age at marriage have no association(21).

2.2 psychosocial related factors

56 women (12 %) on study conducted in South India overall, reported domestic violence. Almost two thirds of these women (64.3 %, n = 36) were subjected to some form of violence from an intimate partner. Women had reported partner violence in different forms; 97% (n = 35) of the women experienced psychological abuse, 52.8 % (n = 19) reported physical abuse, and 19.4 % were subjected to sexual abuse by their partner. Among women who reported suicidal behavior, the rate of domestic violence was 42.9 % ,p(<0.001) showing association with suicidal behavior (36).

In fiji, and South America societies, most suicidal behaviors are associated with marital violence. Furthermore data from different study indicates that verbal and physical abuse remains of most important precipitants of female suicidal behavior. Emotional, physical and sexual abuse can also be a risk factor for suicide. Research done on women's suicidal behavior shows wife abuse is the most notable contributors of female suicide, reason for this can be no one support to defend her when she is a victim, so suicide may be revenge suicide in response of abusive husband, because of sham and powerlessness women take her own life to shift the burden of humiliation from themselves to their abusers(37).

In most Asian societies and in rural areas of developing countries domestic violence is common (38). In population based sample study result shows highly significant relationship between domestic violence and suicidal behavior. In Indonesia 64%, Philippines 28%, Indonesia 11%, Brazil 48%, Egypt 61% of women have significance relation between domestic violence and suicidal behavior (35). In a study conducted in Durban significantly more married women revealed marital violence, spousal alcohol abuse and spousal extramarital affairs as precipitants of their self□destructive behaviors(39)

In study conducted in USA result indicate women havening unfaithful husband were 28% at higher risk for suicide when compared to those who had faithful partner(2.57, CI: 1.38–4.79, P=.003)(40)

2.3 Maternal and infant related factors

In New York on self-reported-suicidal behavior was evaluated with patient health questionnaire and from Edinburgh postnatal depression scale and for those women who found to have history of depression with self-efficacy was associated with lower odds of suicidal behavior showing borderline significance (p= 0.05) (31).

On cross-sectional study conducted in Pelotas, Depressive episodes, hypo(manic) and mixed episodes, panic disorders, social phobia, generalized anxiety disorder (GAD), obsessive compulsive disorder (OCD), and posttraumatic stress disorder (PTSD) were correlated with suicide risk ($p<0.001$). The number of anxiety disorders was also associated with suicide risk. The mothers who is labeled as having depressive episodes showed a 12.57 (6.99, 22.59) times greater risk for presenting with suicidal signs. The women who had hypomanic episodes were 7.01 (3.54, 13.88) times more likely to shows signs of suicide risk compared to those without hypomanic episodes. The women with mixed episodes are 38.67 (19.52, 76.57) times greater risk than those who did not suffer from mixed episodes. The suicide risk was 5.42 (3.73, 7.89) times greater in mothers who were diagnosed with panic disorder compared with those who did not present with such an episode during the postpartum period and 4.56 (3.11, 6.70) times greater in the mothers who had social phobia compared with those(17).

The prevalence of suicide risk was 4.32 (3.08, 6.07) times higher in women who suffered from a GAD compared with those who did not. The mothers who had OCD were 3.96 (2.65, 5.93) times more likely to shows signs of suicide risk and women with PTSD had a 5.49 (3.80, 7.94) times greater risk of showing suicidal signs compared with those who did not have PTSD. We found that women who had two or more anxiety disorders were 12.34 (7.12, 21.39) times more likely to show suicidal signs (18)

In study conducted in India More than half of the participants (264 (57 %)) were multiparous. The mean week of pregnancy at the time of assessment was 11.61 weeks (SD = 2.8 weeks), with the gestational age ranging between 5 and 20 weeks. P(0.60) showing no association with suicidal behavior and parity(36)

In study conducted in Sweden almost half of the women experienced some adverse event during pregnancy or delivery, three women were carrying twin pregnancies, two pairs delivered at full term and one pair was born at 29 gestational weeks. Another seven deliveries were preterm (435 but 537 gestational weeks). The 100 pregnancies of mothers who died by suicide after delivery resulted in 102 live births. Nineteen infants suffered neonatal complications other than prematurity such as asphyxia, infection, and mall for gestational age, neonatal respiratory distress, hypoglycemia, fractured clavicle, cephalohematoma or congenital malformation (including one baby with a ventricular septum defect, four babies with musculoskeletal abnormalities and one with hypospadias). One woman had an intrauterine fetal death and one child died within 30 days of birth. There were two cases of suicide and infanticide (21).

Even though pregnancy have protective result against suicide this protective outcome may be reduced in pregnancies with negative outcome like that of stillbirth or miscarriage, if the pregnancy is unwanted and mothers aged <20(41). Suicide risk increase 7 folds in the first year after child birth and 17 fold in younger in women with postpartum psychosis. Additionally in younger women abortion, mental health problem including anxiety, depression and substance use disorder can increase their exposure to suicidal behavior (15). And in other studies women who were not able to conceive after treatment with fertility problem have a higher risk of suicide.In India among younger women, the suicide rate was 5.9 per 100,000 post-live birth, 34.7 per 100,000 post abortion, and 18.1 per 100,000 for miscarriage. Strikingly, the suicide rate after live birth and abortion in women younger than age 20 was higher than that of the same age group in the general population, suggesting that the postpartum period may not confer the same protective effect for teens as it does for older women(35)In study conducted in South Africa women who were diagnosed with a sexually transmitted infection (STI) excluding HIV in the past year, inconsistent condom use with the primary partner, internalized stigma, and discrimination experiences were found to be associated with suicidal ideation. In multivariate analysis having been diagnosed with a sexually transmitted infection (STI) were found to be associated with suicidal ideation p(0.001)(34).

Conceptual frame work

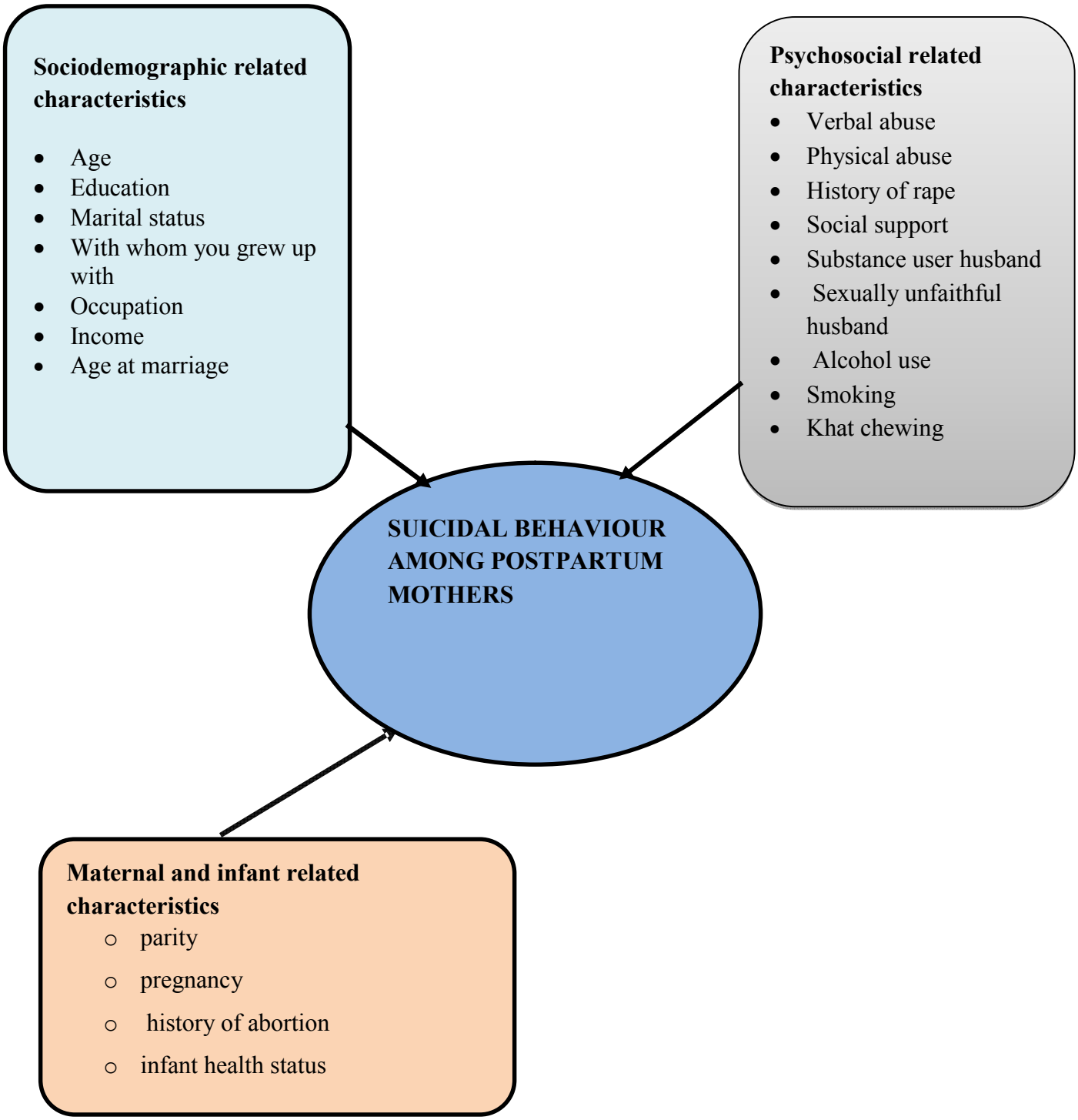

Figure 1: conceptual framework on suicidal behavior among postpartum mothers adapted from different kinds of literatures(16,24,14,21,25,31,33)

3. OBJECTIVE

3.1 General objective

To assess the prevalence and associated factorsof suicidal behavior among postpartum mothers attending at public health centers of Addis Ababa, Ethiopia, 2020.

3.2 Specific objectives

1) To determine the prevalence of suicidal behavior among post-partum mothers attending at public health centers in Addis Ababa.
2) To identify the factors associated with suicidal behavior in post-partum mothers attending at public health centers in Addis Ababa.

4. METHODS AND MATERIALS

4.1 Study area and period

The study was conducted in ten randomly selected public health centers of Addis Ababa Ethiopia from February1 to March 15 /2021. Addis Ababa is the capital city of Ethiopia with a great diversity of ethnicity almost home of all ethnicity found in the country.Addis Ababa city is divided in to 11sub-cities containing 118 woredas at which the City lies at an altitude of 7,700 feet (2,355metres). According to population projection value for 2021 the city has an estimated total population of 5,005,524 (42).According to Addis Ababa city health office report the city has 101 health centers and each sub city has 7-13 health centers. The health centers are ruled by Addis Ababa Health Bureau.

4.2 Study design

A facility -based cross sectional study was conducted.

4.3 Populations

4.3.1 Source population

All postnatal mothers attending at the public health centers of Addis Ababa, Ethiopia for routine postnatal care.

4.3.2 Study population

All randomly selected mothers who attend at the ten health centers for routine postnatal care during the study period.

4.4 Inclusion and exclusion criteria

4.4.1 Inclusion criteria

All mothers attending at the ten health centers for (general checkup for the mother and the baby including immunization which is mandatory during the 6-week postpartum) were included in the study from February 1 to March 15 /2021.

4.4.2 Exclusion criteria

Those Mothers who refuse to participate and who were seriously sick, unable to respond to the questions.

4.5 Sample size determination and sampling technique

4.5.1 Sample size determination

A single population proportion formula was used to calculate the sample size by considering the following statistical assumptions.

P = proportion of postpartum mothers with suicidal behavior take = 14 %(21).

Z α/2 = the corresponding Z score of 95% CI

d= Margin of error (5%)

N= Sample size

N= $\frac{Z (a/2)^2 P (1-P)}{d^2}$ = $\frac{(1.96)2*0.14*0.86}{0.0025}$ = 185.01 ~ **186, 10**% non-response =18.6.

Therefore, the sample size calculated with adding of 10% non-response rate is **205.**

Because of multistage samplingtechnique; the sample size was multiplied by the design effect. By taking 3 as thedesign effect, the required sample size was **615.**

4.5.2 Sampling procedure and technique

Multistage sampling technique was employed to select the respondents of the study. First from eleven sub-cities found in Addis Ababa city government, four sub cities (Lideta, Nifasilik

lafto, Kirkos and Gulele) was 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 Nifasiliklafto each and 3 from Gulele and kirkos each) Health centers was selected by a lottery method. The numbers of women to be included in the study from the selected health centers was determined using proportion to size allocation technique on the basis of previous one month data from the respected health centers. Systematic random sampling was used to select mothers participating in the study. The first woman was selected by lottery method and then every 2 women visiting the health center participating in the study.

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

Formula = $\frac{\text{each health centers one month average x total sample size (615)}}{\text{Total average population of the ten health centers (423)}}$

1. Teklehaymanot health center = 50 x 615 = 72participants

423

2.Lideta health center = 40 x 615 = 58 participants

423

3. Woreda 10 health center =20 x 615= 31 participants

423

4. Woreda 12 health center = 50 x 615 = 72 participants

423

5. Kirkos health center = 70 x 615= 108 participants

423

6.Efoyta health center = 10 x 615 = 15participants

423

7. Feres meda health center = 34 x 615 = 49participants

423

8. Addisugebeya health centers = 50 x 615 = 72participants

423

9. Hdase health center = 50 x 615 = 72 participants

423

10. Shiromeda health center = 50 x 615 = 72participants

423

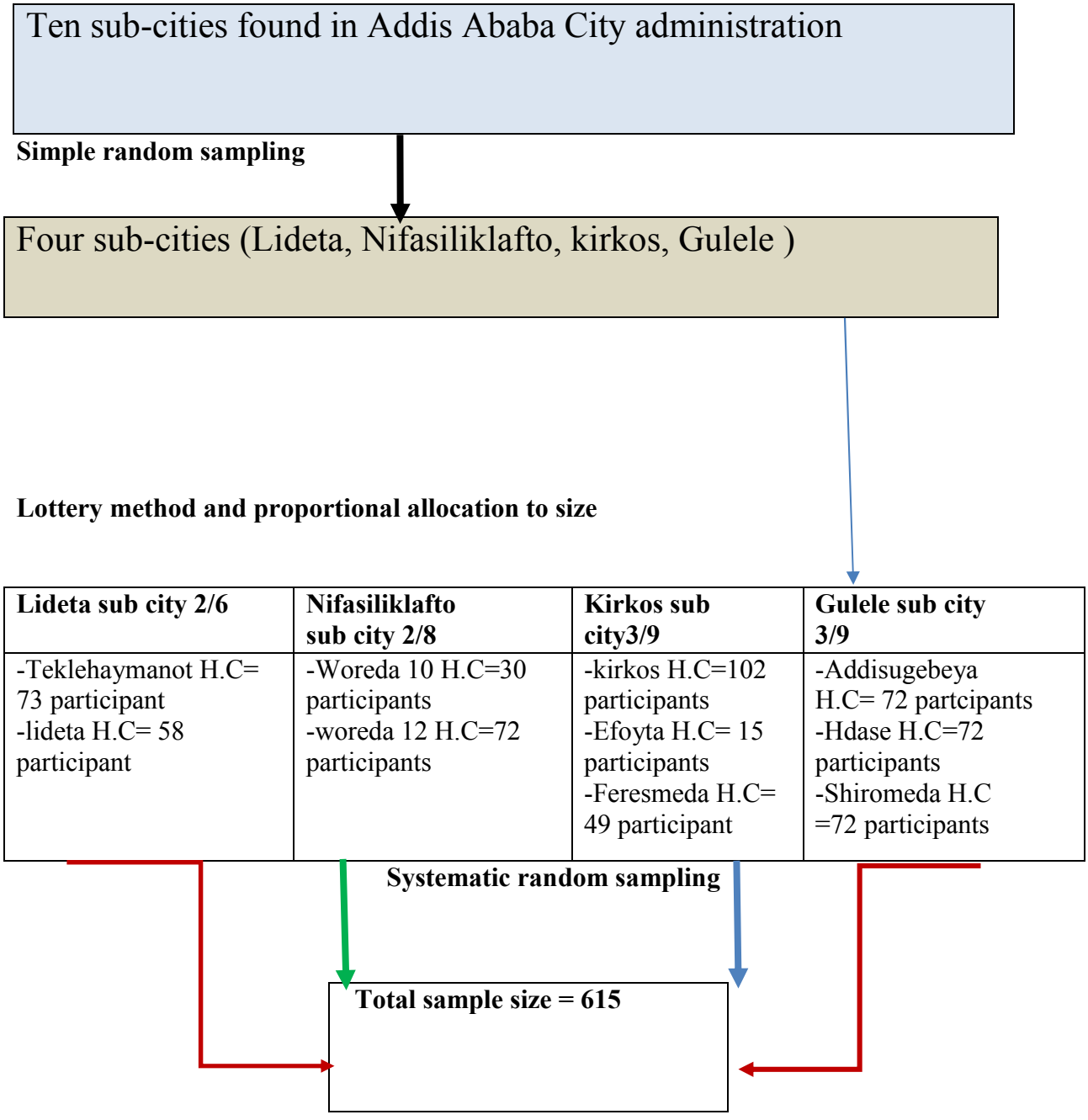

Figure 2: Schematic presentation of sampling procedure

4.6 Variables

4.6.1 Dependent variable

Post-partum suicidal behavior

4.6.2 Independent variables

- Socio demographic related characteristics (age, education, marital status, with whom you grew up with, occupation , relative wealth and age at marriage)
- Psychosocial related characteristics (verbal abuse, physical abuse, history of rape, social support, substance user husband, sexually unfaithful husband, alcohol use, smoking, khat chewing)
- Maternal and infant related characteristics (parity, pregnancy, history of abortion, infant health status, history of depression)

4.7 Operational definitions

Suicidal behavior- mother who responds 'yes' to one of the six questions,using the suicidal screening tool, she is considered at risk for suicidal behavior.

Postpartum period- period beginning immediately after the birth of a child and extending for about six weeks.

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

Verbal abuse- repeated words to demean, frighten or control someone.

Physical abuse- women having any intentional act causing injury or trauma by intimate person.

4.8 Data collection instruments

Data was collected with an interviewer administered questioner developed from reviewing related literature to collect the required individual information from the relevant documents. The questionnaire consists of the Socio-demographiccharacteristics (age, education, marital status, with whom did you , job, relative wealth and age at marriage), Psychosocial related characteristics (verbal abuse, physical abuse, history of rape, social support, substance user husband, sexually unfaithful husband, alcohol use, smoking, khat

chewing) and Clinical related characteristics (parity, pregnancy, history of abortion, infant health status, history of depression) (17,21,34) .

4.9 Data collection procedure

Five nurses and one supervisor who were not employees of the selected health centers was assigned as a data collector and they were trained for one day on information about the researchobjective, eligible study subjects, data collection tools and procedures, and interview methods.

Data quality management

Data collection instrument were Pretested on 5% non-study participant that fulfil the inclusion criteria to check accuracy of responses, language clarity, appropriateness of data collection tools, estimate the time required and the necessary amendments were considered based on it prior to the actual data collection. Completeness and consistency of the collected data was checked on daily bases during data collection by the supervisor and the principal investigator. The researcher was checking forcompleteness and consistency of questionnaires filled by the data collectors to ensure the qualityof the data, and also visit the data collectors as many times as possible to check whether he/shecollected the data appropriately. The researcher appraises the data during the data analysisstage to verify the completeness of the collected data.

4.10 Data processing and analysis

After data collection, filled data was entered in statistical software Epi data 4.6 and was subjected to cleaning using simple frequency and tabulation to ensure its validity. Then, the analysis was done by SPSS version 25 statistical software. After exporting the prepared data descriptive statics such as Frequency distribution and measure of central tendency and variability (mean and standard deviation) was computed to describe the major variables of the study. All variables with p-value ≤ 0.25 were taken into the multivariable model to control for all possible confounders. To indicate the strength and statistical significance of the association of the selectedindependent and dependent variables, odds ratio and 95% CI was used. For all of statistical tests used in this study, the significant level was set at p-value < 0.05.

4.11 Ethical clearance

Ethical clearance was obtained from the Ethical Review Committee of Addis Ababa University College of Health Sciences. Permission was attained from the responsible body of the health centers. Written informed consent was obtained from each participant after the investigator explained the nature, purpose and procedure of the study. Anonymity and confidentiality of the data providers was strictly maintained. Participants were assured that their participation were voluntarily, and they had right to withdraw or refuse to give information at any time in the study without any penalty.

4.11 Dissemination of result

Primarily, the result of this study was submitted to, Addis Ababa university department of nursing and midwifery. The dissemination will also go to the federal ministry of health and other health institutions. In addition, efforts were made for the publication of the research on the reputable journal.

5. RESULT

5.1. Socio-demographic characteristics

With 100% response rate, 615 postpartum women were enrolled in the study. Majority of the mothers 395(64.23%) age was between 25-34 years. from the total study subjects 443 (72.03%) were literate. Three hundred forty six (56.26%) of the respondents were jobless. Of all 571 (92.85%) women were married among these 191 (31.99%) got married at age younger than 20years, 325 (54.44%) mothers married at the age ranging between 21-25years. (Table 1)

Table 1: Socio-Demographic characteristics among women in postpartum period, in health centers of four selected sub-cities of Addis Ababa, Ethiopia, (N=615).

Variables	**Frequency(N=615)**	**Percentage (%)**
Age		
18-24	131	21.3%
25-34	395	64.2%
>34	89	14.5%
Education		
Literate	443	72.0%
Cannot read and write	172	28.0%
Grew up with		
Mother	401	65.2%
Stepmother	9	1.5%
Relatives	205	33.3%
Marital status		
Currently married	571	92.8%
Currently unmarried	44	7.2%
Job		
Has job	269	43.7%
Jobless	346	56.3%
Current wealth		
Lower	94	15.3%
Same	293	47.6%
Higher	228	37.1%
Age at marriage n=597		
Younger than 20yrs	191	32%
21-25yrs	325	54.4%
26yrs and above	81	13.6%

5.2. Psychosocial and clinical characteristics

243 (39.5%) of mothers respond it was their first pregnancy. Of all the participants 81 (13.17%) declared the current pregnancy was unplanned. Moreover 18.70% of mothers had a history of abortion. Among all the study subjects 23.74% had experienced verbal abuse in addition 55 mothers had physical abuse from intimate partner. Furthermore 34 (5.53%) mothers had history of rape once in life time. Of all Mothers who were found to be married 42(7.13%) revealed they had sexually unfaithful husband. Regarding substance use 41 women reported that they chewed Khat, 20.98% mother's drunk alcohol (Table 2).

Table 2: Psychosocial and clinical characteristics among women in postpartum period, in health centers of four selected sub-cities of Addis Ababa, Ethiopia, (N=615).

Variables	**Frequency(N-615)**	**Percentage (%)**
Parity		
First	243	39.5%
Second	238	38.7%
Third	100	16.3%
Fourth	34	5.5%
Verbal abuse		
Yes	146	23.7%
No	469	76.3%
Physical abuse		
Yes	55	8.9%
No	560	91.1%
History of rape		
Yes	34	5.5%
No	581	94.5%
Pregnancy		
Planned	534	86.8%
Unplanned	81	13.2%
History of abortion		

Yes	115	18.7%
No	500	81.3%
Social support		
Good	116	18.9%
Poor	499	81.3%
Infant health status		
Sick	24	3.9%
Healthy	591	96.1%
History of depression		
Yes	31	5%
No	584	95%
Substance user husband n=590		
Yes	35	5.9%
No	555	94.1%
Sexually unfaithful husband n=589		
Yes	42	7.1%
No	547	92.9%
Alcohol use		
Yes	129	21%
No	486	79%
Smoking		
Yes	30	5%
No	585	95%
Khat chewing		
Yes	41	7%
No	574	93%
Cannabis use		
Yes	20	3.3%
No	595	96.7%

5.3. Prevalence of suicidal behavior among postpartum women

From all the study subjects enrolled in the study prevalence of suicidal behavior were 255 (41.46%). Of these 98.45% (254/258) wished they were dead, 66.93% (172/257) wanted to harm them self, 14.57% (37/217) of women have planned how to commit suicide, 25% (64/256) had suicidal ideation, 12.99% (33/254) of the respondents had attempted suicide. (Figure 3).

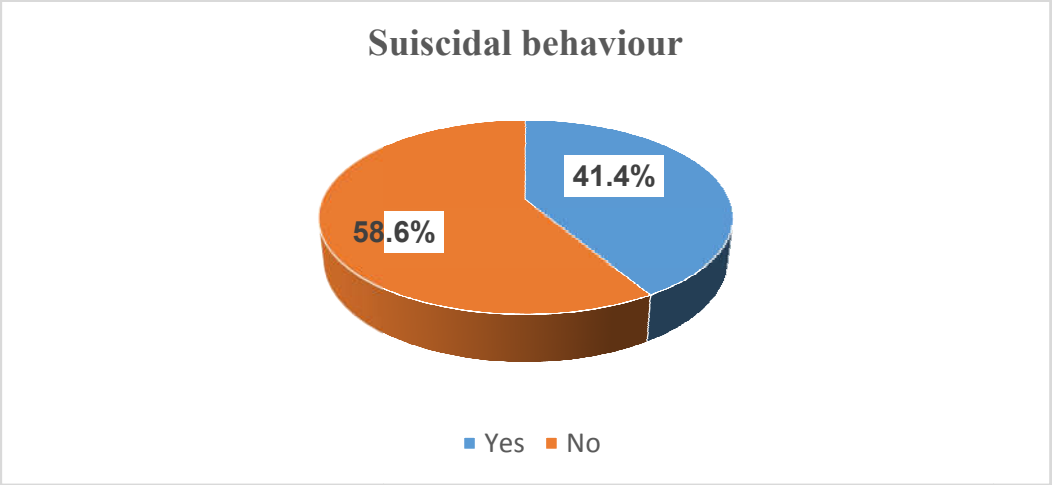

Figure 3: prevalence of suicidal behavior among postpartum women's, from health centers of four sub-cities of Addis Ababa city Administration, Ethiopia, (n= 615)

5.4. Association factors of suicidal behavior in post-partum mothers

The association of the independent and dependent variable were first tested by using bi-variable analysis variable which were associated at (P≤0.25) were tested in the final multivariable analysis to see their significant association with suicidal behavior. Accordingly,those bi-variable regressions associated with suicidal behavior were age of the mother, educational status, grew up with, marital status, job, relative wealth, unplanned pregnancy of the current child, infant health status,physical abuse,verbal abuse,history of rape, , history of depression, substance user husband, sexually unfaithful husband, alcohol use, smoking and khat chewing. On the other handSocial support, age at marriage, parity, history of abortion, and cannabis use found to have no association with suicidal behavior of the mother.

In Multivariable analysis results showed that, there was statistically significance association between suicidal behavior parameters which showed p-value of below 0.05 were educational status, verbal abuse, history of rape, history of depression, sexually unfaithful husband and khat chewing.

The odds of education status of the mother who cannot read and write were 0.64(AOR=0.64, 95% CI: 0.42-0.97) times less likely to have suicidal behavior whencompared with mothers who are literate,

Mother who had Verbal abuses were 2.18 (AOR=2.18, 95% CI: 1.38-3.44) times more likelyto risk suicidal behavior of compared with mothers who had no verbal abuses.

History of rape among mothers was also found affecting the outcome variable. Those women who had history of rape were 3.03 (AOR=3.03, 95% CI 1.14 -8.05) at higher risk for suicidalbehavior compared with mothers who had no history of rape by odds of.Those women who had history of depression were four times at higher odds of having suicidal behavior as compared to women who had no history of depression (AOR=4.12, 95%CI1.21-14.03)

Women having sexually faithful husband were 0.34(AOR=0.34, 95% CI 0.14-0.81)times less suicidal behavior compared with mothers who hadsexuallyunfaithful husband.

In addition Mothers who chew khat were8 times at higher risk for suicidal behavior compared to those who don't chew khat(AOR=8.48, 95% CI 2.52-28.50).

Table 3: Bi-variable and multivariable logistic regression of suicidal behavior among women in postpartum period, in health centers of four selected sub-cities of Addis Ababa, Ethiopia, (n=615).

Variable	Suicidal behavior		COR (95% OF CI)	P-value	AOR (95% OF CI)
	No n (%)	Yes n (%)			
Education status					
Literate	272(44.22%)	171(27.80%)	0.66(0.46-0.94)	0.021	0.64(0.42-0.97)*
Cannot read and write	88(14.30%)	84(13.65%)	1		1
Verbal abuse					
Yes	57(9.29%)	89(14.47%)	2.85(1.94-4.18)	0.000	2.18(1.38-3.44)*
No	303(49.26%)	166(26.99%	1		1
History of rape					
Yes	7(1.13%)	27(4.39%)	5.97(2.56-13.94)	0.000	3.03(1.14-8.05)*
No	353(57.39%)	228(37.07%)	1		1
History of depression					
Yes	5(0.81%)	26(4.22%)	8.06(3.35-21.29)	0.000	4.12(1.21-14.03)*
No	355(57.7%)	229(37.23%)	1		1
Sexually unfaithful husband n=589					
Yes	10(1.62%)	32(5.20%)	0.18(0.09-0.38)	0.010	0.34(0.14-0.81)*
No	344(55.93%)	203(33%)	1		1
Khat chewing					
Yes	4(0.65%)	37(6%)	15.11(5.31-42.69)	0.009	8.48(2.52-28.50)*
No	356(57.88%)	218(35.44%)	1		1

Key 1= Reference *Statistically significant by AOR at p-value <0.05.

6. DISCUSSION

The finding of this study revealed the prevalence and associated factors of suicidal behavior among postnatal women who gave birth in different health centers in Addis Ababa, Ethiopia. The study participants were selected from women who came for postnatal care and vaccination services in health centers. Findings from this study might therefore highlight the current levels of suicidal behavior among postpartum women and its associated factors. In addition it could confirm the need and possibility of integrating suicidal behavior screening into antenatal, postnatal and child health services.

The study indicated 255 (41.46%) respondents were having suicidal behavior during their postpartum period. This result implied that significant proportion of women were experiencing suicidal thoughts and ideation, hence maternal mental health problem is a concern enhancing for which integrated services are crucially needed. This was moderatelycomparable with the study which was conducted in South Africa found equivalent prevalence rate. Where suicidal behavior was 41.2%(34). Under other condition this figure was higher when compared to other similar studies done in brazil (11.5%)(17), Peru (12.0%)(14), united kingdom (9.0%)(43), Serbia(1.9%)(14), Tanzania(0.8%)(14). With similar study conducted in Northwestern Ethiopia result implied prevalence of suicidal behavior among post-partum mothers were 14.0%(21). Discrepancy in result might be due to the different tools, assessment period, methods and economic status. For instance the study in Brazil used only Three suicidal outcomes were included in this analysis to assess suicidal behavior(suicidal thoughts in the past four weeks, ever thinking about suicide, and ever attempting suicide)(14). Furthermore, ongoing prospective cohort study of pregnant women was used to assess suicidal behavior in study conducted in Peru (44).

Those women who didn't go to school or who were unable to read or write were 36% times less likely to have suicidal behavior when compared with mothers who went to school or are literate. This result is in contrary with other similar studies, which might be due to the differences in health facility, study design, variable category, and sample size variation across studies. For instance in study conducted in Brazil among 919 postpartum women majority of the subjected were illiterate 43.5% and also categorization for educational status was (incomplete elementary school, incomplete high school, and complete high school) (17).

The other variable that was found to have significant association was Verbal abuse, Mother who experience verbal abuses were 2.18times (AOR=2.18,95%CI; 1.38-3.44) more likely to have suicidal behavior when compared with mothers who had no verbal abuses. Postpartum women who experienced verbal abuse from partner were at higher risk of thoughts of self-harm and attempt of suicide. Other reports similarly indicated a 4-fold increased risk for suicidal behavior. Consistent with findings from different studies, women with verbal abuse were permitting to, mental disorders physical disease and also result in pregnancy-related complications like the birth of premature newborns with low birth weight. The increased exposure to comorbid medical disorders and complications in pregnancy could signify the undergoing effects of verbal abuse on the stress response system.(45) This might be due to in Ethiopian culture it's forbidden for women to respond to husband so this repeated verbal abuse result in withdrawing from life.

Another significant association found in the study was between mothers who had history of rape during their lifetime and suicidal behavior. The finding was supported by previous studies, mothers who had a history of rape or physical abuse were more at risk for the incidence of suicidal behaviors and other psychiatric disorders in their lifetime(45). Studies which was conducted in different countries result indicates that prevalence of suicide among women who had experience of violence demonstrate a strong association, there was a 15-fold variation in the prevalence of suicide attempts across sites,(14). This finding might be due to the psychological pain, shame, and hating own self because of the trauma and taking suicide as a revenge.

Furthermore mothers who were diagnosed with depression form the current child were 4 times at higher risk for suicidal behavior than mothers who had no depression. This finding is in agreement with some previous studies that suggested history of depression was a cofactor for suicidal behavior. The finding showed that the post-partum depression had the greatest impact on suicide risk. Comorbidity is an important consideration when the risk factors for suicidal behavior are being evaluated. Psychological disorders rarely occur alone more frequently with depression a strong risk factor for suicidal behavior than without it(17). Significantly higher rate of suicidal behavior have been reported, which suggests that 10-27% of those suffering from post-partum depression may attempt suicide at least once in their lifetimes(43).

The result revealed that study subjects having sexually faithful husband were 66% times less likely to have risk for suicide compared with mothers who had sexually unfaithful husband. This might be due to their satisfaction with their marriage life. In contrast those who had sexually unfaithful husband had risk for suicidal behavior. This finding is supported with study conducted in USA (28%) of women with suicidal behavior found to have, "problems with a current or former intimate partner" were associated with the suicide(40). The reason for women to think about suicide might be due to women who had cheater husband might blame herself for the infidelity result in unhealthy coping strategies.

On the present study mothers who chew khat were 8 times at higher risk for suicidal behavior compared with mothers who doesn't chew khat. This finding was in line with a literature despite additional substances were also used for instance in study conducted in USA the category substance were used for (illicit substance, alcohol, and tobacoo)(23). Studies have previously analyzed the association between alcohol use during pregnancy and suicidal behavior both reporting a significant positive association, one exploring factors associated with self-poisoning and current suicide risk(7). Therefore addictive behavior during pregnancy and post-partum period will aggravate existing mental health problem and negative birth outcome resulting in post-partum depression adding to suicidal behavior.

7. STRENGTH AND LIMITATIONS OF THE STUDY

7.1. Strength of the study

Data was collectedthrough face to face interview which could be able to reduce information bias.

7.2. Limitation of the study

Using a cross-sectional study design which hinders the researcher from establishing cause and effect relationship between the possible determinant of suicidal behavior and the outcome of interest.

8. CONCLUSIONAND RECOMMENDATION

8.1. Conclusion

Suicidal behavior were a common mental health problem at the postpartum period. This study result indicate prevalence of suicidal behavior as 41.46% which was high value. It also identifies the association between suicidal behavior and educational status,history of depression, verbal abuse, history of rape, sexually unfaithful husband and khat chewing were highly significant in this study. On the other hand there was no association between suicidal behavior and age, grew up with, parity, history of abortion, social support, and cannabis use.

8.2. Recommendations

For ministry of health

- Ministry of health should prepare policiesin integrating mental and reproductive health services. By adding suicidal screening tool as routine antenatal and postnatal care.

For women, youth and children affair

- Women's affair office should create Inter sector collaboration with health institutions for those women who had report of domestic violence (verbal abuse, rape) during screening for suicidal behavior.

For health institution

- Training providers should give a continuous training for all health care providers specially midwife,nurses, and health officers to be able to pick suicidal behavior as early as possible.
- 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.

Other stake holders

- Religious institutions, society leaders should increase perception on the impact of being unfaithful to marriage life, cheating, and suicide among the society.
- Further research are needed on suicidal behavior using different study design, set up and sample size in order to investigate further contributing factors of suicidal behavior.

9. REFERENCE

1. De Leo D, Burgis S, Bertolote JM, Kerkhof AJFM, Bille-Brahe U. Definitions of suicidal behavior: Lessons learned from the WHO/EURO Multicentre Study. Crisis. 2006;27(1):4–15.

2. In This Issue. Policy Polit. 2007;5(4):1–2.

3. Sit D, Seltman H, Wisner KL. Seasonal effects on depression risk and suicidal symptoms in postpartum women. Depress Anxiety. 2011;28(5):400–5.

4. Silverman MM, Berman AL, Sanddal ND, O'Carroll PW, Joiner TE. Rebuilding the Tower of Babel: A Revised Nomenclature for the Study of Suicide and Suicidal Behaviors Part 2: Suicide-Related Ideations, Communications, and Behaviors. Suicide Life-Threatening Behav. 2007;37(3):264–77.

5. Van Orden KA, Witte TK, Cukrowicz KC, Braithwaite SR, Selby EA, Joiner TE. The Interpersonal Theory of Suicide. Psychol Rev. 2010;117(2):575–600.

6. Balázs J, Benazzi F, Rihmer Z, Rihmer A, Akiskal KK, Akiskal HS. The close link between suicide attempts and mixed (bipolar) depression: Implications for suicide prevention. J Affect Disord. 2006;91(2–3):133–8.

7. Library Genesis_ - The International Handbook of Suicide and Attempted Suicide.

8. Murphy GE. Why women are less likely than men to commit suicide. Compr Psychiatry. 1998;39(4):165–75.

9. Canetto SS, Lester D. Gender and the Primary Prevention of Suicide Mortality. Suicide Life□Threatening Behav. 1995;25(1):58–69.

10. Kessing LV, Agerbo E, Mortenssen PB. Major stressful life events and other risk factors for first admission with mania. Bipolar Disord. 2004;6(2):122–9.

11. Lindahl V, Pearson JL, Colpe L. Prevalence of suicidality during pregnancy and the postpartum. Arch Womens Ment Health. 2005;8(2):77–87.

12. Nock MK, Posner K, Brodsky B, Yershova K, Buchanan J, Mann J. The Classification of Suicidal Behavior. Oxford Handb Suicide Self-Injury. 2014;(March):0–17.

13. Murphy SL, Kochanek KD, Xu J, Arias E. Mortality in the United States, 2014 Key findings Data from the National Vital Statistics System, Mortality How long can we expect to live? 2014;(229).

14. Devries K, Watts C, Yoshihama M, Kiss L, Schraiber LB, Deyessa N, et al. Violence against women is strongly associated with suicide attempts: Evidence from the WHO multi-country study on women's health and domestic violence against women. Soc Sci Med [Internet]. 2011;73(1):79–86. Available from: http://dx.doi.org/10.1016/j.socscimed.2011.05.006

15. Appleby L. Suicidal behaviour in childbearing women. Int Rev Psychiatry. 1996;8(1):107–15.

16. Agampodi S, Wickramage K, Agampodi T, Thennakoon U, Jayathilaka N, Karunarathna D, et al. Maternal mortality revisited: The application of the new ICD-MM classification system in reference to maternal deaths in Sri Lanka. Reprod Health. 2014;11(1):1–5.

17. Tavares D, Quevedo L, Jansen K, Souza L, Pinheiro R, Silva R. Prevalence of suicide risk and comorbidities in postpartum women in Pelotas. Rev Bras Psiquiatr [Internet]. 2012;34(3):270–6. Available from: http://dx.doi.org/10.1016/j.rbp.2011.12.001

18. Howard LM, Flach C, Mehay A, Sharp D, Tylee A. The prevalence of suicidal ideation identified by the Edinburgh Postnatal Depression Scale in postpartum women in primary care : findings from the RESPOND trial. BMC. 2011;57(11):1–10.

19. Burgut FT, Bener A, Ghuloum S, Sheikh J. A study of postpartum depression and maternal risk factors in Qatar. J Psychosom Obstet Gynecol. 2013;34(2):90–7.

20. Esscher A, Essén B, Innala E, Papadopoulos FC, Skalkidou A, Sundström-Poromaa I, et

al. Suicides during pregnancy and 1 year postpartum in Sweden, 1980-2007. Br J Psychiatry. 2016;208(5):462–9.

21. Belete H. Suicidal behaviour in postnatal mothers in northwestern Ethiopia : a cross-sectional study. BMC. 2019;1–8.

22. Girma E, Tesfaye M, Froeschl G, Möller-Leimkühler AM, Müller N, Dehning S. Public stigma against people with mental illness in the Gilgel Gibe Field Research Center (GGFRC) in Southwest Ethiopia. PLoS One. 2013;8(12).

23. Crosby AE, Han B, Ortega LAG, Parks SE, Gfroerer J, Centers for Disease Control and Prevention (CDC). Suicidal thoughts and behaviors among adults aged ≥18 years--United States, 2008-2009. MMWR Surveill Summ [Internet]. 2011;60(13):1–22. Available from: http://www.ncbi.nlm.nih.gov/pubmed/22012169

24. Simon GE, Rutter CM, Peterson D, Oliver M, Whiteside U, Operskalski B, et al. Does response on the PHQ-9 depression questionnaire predict subsequent suicide attempt or suicide death? Psychiatr Serv. 2013;64(12):1195–202.

25. Castro e Couto T, Brancaglion MYM, Cardoso MN, Faria GC, Garcia FD, Nicolato R, et al. Suicidality among pregnant women in Brazil: prevalence and risk factors. Arch Womens Ment Health. 2016;19(2):343–8.

26. Womens A, Health M. women. 2016;18(4):573–8.

27. Risk HUM, Moses-kolko EL, Hipwell AE, Ph D, D CP. First-Onset Postpartum Psychiatric Disorders Portend. :559–61.

28. Vijayakumar L. Suicide in women. Indian J Psychiatry. 2015;57(July 2015):233–8.

29. Gressier F, Guillard V, Cazas O, Falissard B, Glangeaud-Freudenthal NMC, Sutter-Dallay AL. Risk factors for suicide attempt in pregnancy and the post-partum period in women with serious mental illnesses. J Psychiatr Res [Internet]. 2017;84:284–91. Available from: http://dx.doi.org/10.1016/j.jpsychires.2016.10.009

30. Sareen J, Cox BJ, Afifi TO, De Graaf R, Asmundson GJG, Ten Have M, et al. Anxiety

disorders and risk for suicidal ideation and suicide attempts: A population-based longitudinal study of adults. Arch Gen Psychiatry. 2005;62(11):1249–57.

31. Coates AO, Schaefer CA, Alexander JL. Detection of Postpartum Depression and Anxiety in a Large Health Plan. J Behav Heal Serv Res. 2004;31(2):117–33.

32. Davidson CL, Wingate LRR, Grant DMM, Judah MR, Mills AC. Interpersonal suicide risk and ideation: The influence of depression and social anxiety. J Soc Clin Psychol. 2011;30(8):842–55.

33. Smith JC, Mercy JA, Conn JM. Marital status and the risk of suicide. Am J Public Health. 1988;78(1):78–80.

34. Peltzer K. Prevalence of suicidal ideation and associated factors among postpartum HIV-positive women in health facilities , South Africa. 2015;0237.

35. Vijayakumar L. Suicide in women. 2020;57(July 2015):233–8.

36. Supraja TA, Thennarasu K, Satyanarayana VA, Seena TK, Desai G, Jangam K V, et al. Suicidality in early pregnancy among antepartum mothers in urban India. Arch Womens Ment Health [Internet]. 2016;1101–8. Available from: http://dx.doi.org/10.1007/s00737-016-0660-2

37. Counts DA. Female Suicide and Wife Abuse: A Cross□Cultural Perspective. Suicide Life□Threatening Behav. 1987;17(3):194–204.

38. Semahegn A, Mengistie B. Domestic violence against women and associated factors in Ethiopia; Systematic review. Reprod Health. 2015;12(1).

39. Pillay AL, van der Veen MBW, Wassenaar DR. Non-fatal suicidal behaviour in women - The role of spousal substance abuse and marital violence. South African J Psychiatry. 2001;7(4):115–8.

40. System R, Marcus SM, D M, Palladino CL, Sc M. Mental health , substance use and intimate partner problems among pregnant and postpartum suicide victims in the National Violent Death. Gen Hosp Psychiatry [Internet]. 2012;34(2):139–45. Available

from: http://dx.doi.org/10.1016/j.genhosppsych.2011.09.017

41. Appleby L. Suicide during pregnancy and in the first postnatal year. 1991;302:137–40.

42. UNICEF. Situation analysis of children and women: Somali Region. 2019;224.

43. Howard LM, Flach C, Mehay A, Sharp D, Tylee A. The prevalence of suicidal ideation identified by the Edinburgh Postnatal Depression Scale in postpartum women in primary care: Findings from the RESPOND trial. BMC Pregnancy Childbirth [Internet]. 2011;11(1):57. Available from: http://www.biomedcentral.com/1471-2393/11/57

44. Zhong Q, Gelaye B, Rondon MB, Sánchez SE, Sánchez PM, Williams MA. Using the Patient Health Questionnaire (PHQ-9) and the Edinburgh Postnatal Depression Scale (EPDS) to assess suicidal ideation among pregnant women in Lima , Peru. 2015;783–92.

45. Sit D, Luther J, Buysse D, Dills JL, Eng H, Okun M, et al. Suicidal ideation in depressed postpartum women : Associations with childhood trauma , sleep disturbance and anxiety. J Psychiatr Res [Internet]. 2015;66–67:95–104. Available from: http://dx.doi.org/10.1016/j.jpsychires.2015.04.021

10. ANNEXS

Annex I: 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 suicidal behavior .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 it's 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; 0988520822 Email selamtilahun177@gmail.com

Annex II: Consent 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 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; 0988520822

Email selamtilahun177@gmail.com

Annex III: Questionnaire Form; English Version

Questions related to Prevalence and associated factors of suicidal behavior among postpartum women

Date _____ Questioner code 001

Date of delivery _____

Part 1 socio-demographic characteristic

NO	Question	Coding category	Skip
101	How old are you?	…… years	
102	Have you ever attended school?	Yes No	
103	With whom did you grew up?	Mother……1 Stepmother……..2 Relative……3	
104	Current Marital status?	Single……1 Married……2 Divorced……..3 Widowed …….4 Cohabiting……..5	
104	Occupational status	Student…….1 Paid worker…….2 Unpaid employee…….3 House wife…….4 Merchant…….5 Pensioner……..6 Farmer……..7 Unemployed……8	
105	Relative wealth	Lower……..1 Same…….2 Higher…….3	
106	How old were you when you get marriage?	21-25 years……1 26years and above……..2	

2- Psychosocial and clinical characteristic

No	Question	Coding category	Skip
201	How many children do you have?	----------	
202	Verbal abuse	Yes…….1 No ……2	
203	Physical abuse	Yes……..1 No …….2	
204	History of rape	Yes…….1 No …….2	
205	Pregnancy	Planned ……1 Unplanned ……..2	
206	History of abortion	Yes…….1 No ……2	
207	Social support	Poor……..1 Moderate…….....2 Good ……3	
208	Infant health status	Sick……1 Healthy…….2	

209	Have you been diagnosed with depression?	Yes ……..1 No…….2	
210	Substance user husband	Yes…….1 No ……2	
211	Sexually unfaithful husband	Yes…….1 No …….2	
212	Do you drink Alcohol?	Yes…….1 No…….2	
213	Do you smokecigarette?	Yes……1 No ……..2	
214	Khat chewing	Yes……..1 No …….2	
215	Cannabis use	Yes…….1 No …….2	
Part 3 ;Suicidal behavior assessment tool			

216	Have you wished you were dead?	Yes…….1 No …….2	
217	Have you wanted to harm yourself?	Yes…….1 No …….2	
218	Have you thought of committing suicide?	Yes…….1 No …….2	
219	Have you planned how to commit suicide?	Yes…….1 No …….2	
220	Have you attempted suicide? Have you ever attempted suicide?	Yes…….1 No …….2 Yes…….1 No …….2	

Annex IV: Amharic version of the Questionnaire

ቃለ መጠይቅ

የተቋሙ ስም _____የመጠይቅ መለያ ቁጥር_____

መመሪያ:ለቀጣዮቹ ጥያቄዎች ተገቢዉን ምላሽ ይምረጡ

ክፍል ፣ ፡ ማህበራዊ እና የኋላ ጉዳዮች የተመለከቱ ሁኔታዎች

ተ/ቁ	**ጥያቄ**	**መለያቁጥር**	**ምርመራ**
101	ዕድሜዎ ስንትነው ?	_____አመት	
102	መደበኛትምህርትቤትገብተውያዉቃሉ ?	አዉቃለው_____1 አላዉቅም_____2	
103	ከማንጋርነውያደጉት ?	_____	
104	የአሁን የጋብቻሁኔታዎ ምንድን ነው ?	_____	
105	የመንግስት ወይም የግል ስራ አለዎት ?	አለኝ_____ነ የለኝም_____2	
106	ያለዎት ሀብት ከበፊቱ አንጻር ሲታይ እንዴት ነው?	_____	
107	ጋብቻሲመሰርቱእድሜዎስንትነበር ?	_____	
	ስነአዕምሮአዊእናክሊኒካዊጉዳዮችንየሚጠይቁጥያቄዎች		
201	ስንትልጆችአሉዎት ?	_____	
202	በንግግርተነድተውያውቃሉ ?	አውቃለሁ _____1 አላውቅም _____2	
203	የአካልጉዳትደርሶቦዎትያውቃል ?	አውቃለሁ _____1 አላውቅም _____2	
204	ያስገድዶመደፈርደርሶቦዎትያውቃል ?	አውቃለሁ _____1 አላውቅም _____2	

204	የእርግዝናውሁኔታ	የታቀደ _____1 ያልታቀደ_____2	
205	ውርጃአጋጥሞዎትያውቃል ?	አውቃለሁ _____1 አላውቅም _____2	
206	ማህበራዊድጋፍ አለዎት ?	አለኝ_____1 የለኝም_____2	
207	የልጅዎየጤናሁኔታ	ሀመምተኛ_____1 ጥነኛ_____2	
208	በጠናባለሞያየተረጋገጠየድብርትሀመምአለብዎ ?	አለ_____1 የለም_____2	
209	ባለበትዎ አደንዛዥእያይጠቀማል?	ይጠቀማል_____1 አይጠቀምም____2	
210	ባለበትዎ ለትዳሩታማኝነው?	ነው_____1 አይደለም_____2	
211	የአልኮልመጠጥይጠጣሉ ?	እጠጣለሁ_____1 አልጠጣም_____2	
212	ሲጋራአጭሰውያውቃሉ ?	አውቃለሁ_____1 አላውቅም_____2	
213	ጫትቅመውያውቃሉ?	አውቃለሁ_____1 አላውቅም_____2	
214	አደንዛዥእጽተጠቅመውያውቃሉ?	አውቃለሁ_____1 አላውቅም_____2	
215	መሞትተመኝተውያውቃሉ?	አውቃለሁ_____1 አላውቅም_____2	

	እራሶትንስለመጉዳትአስበውያውቃሉ?	አውቃለሁ_____1 አላውቅም_____2	
	እራሶትንስለማጥፍትአስበውያውቃሉ?	አውቃለሁ_____1 አላውቅም_____2	
	እራሶትንለማጥፋትእቅድአውጥተውያውቃሉ?	አውቃለሁ_____1 አላውቅም_____2	
	እራሶትንለማጥፋትሞክረውያውቃሉ?	አውቃለሁ_____1 አላውቅም_____2	
	እራሶትንለማጥፋትሙከራያደርጋሉ?	አውቃለሁ_____1 አላውቅም_____2	