



**JIMMA UNIVERSITY INSTITUTE OF HEALTH
DEPARTMENT OF POPULATION AND FAMILY HEALTH**

Maternal depression and other related factors affecting exclusive breast feeding for age among breast feeding women in Assosa town, Benishangul region, West Ethiopia.

A research thesis submitted to Jimma University, Institute of Health, Department of Population and Family Health in partial fulfillment for the requirement of Master of Science, in Human Nutrition

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JIMMA UNIVERSITY INSTITUTE OF HEALTH
DEPARTMENT OF POPULATION AND FAMILY HEALTH

MATERNAL DEPRESSION AND OTHER RELATED FACTORS
AFFECTING EXCLUSIVE BREAST FEEDING FOR AGE AMONG BREAST
FEEDING WOMEN IN ASSOSA TOWN, BENISHANGUL REGION, WEST
ETHIOPIA.

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II.ABBREVIATION AND ACRONYMS

ANC	Antenatal Care
AOR	Adjusted Odds Ratio
CI	Confidence Interval
COR	Crudes odds ratio
CMD	Common Mental disorders
CSA	Central Statistics Authority
CS	suzerains section
EDHS	Ethiopian Demographic and Health Survey
FGD	Focus Group Discussion
HI	Health Institution
IEC	Information, Education and Communication
HW	Health Worker
LAMI	Low and Middle Income
MMR	Maternal Mortality Ratio
MCS	Maternity care services
MCHS	Maternal and child health services
FMOH	Federal Ministry of Health
OR	Odds Ratio
PNC	Postnatal Care
SSA	Sub-Saharan Africa
SVD-	spontaneous vaginal delivery
SD	Standard Deviation
SPSS	Statistical Package for Social Sciences

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ABSTRACT

Background: Exclusive breastfeeding is defined as feeding infants only breast milk with no addition of any liquid or solids. Evidence shows that sixty percent of under-five mortality caused by malnutrition and more than two-thirds of those are associated with inappropriate breast feeding practices during infancy. Studying additional factors beyond the common determinants, such as those which are intrinsic to the mother like mental wellbeing or depression has paramount importance which could give a better insight for promotive activities.

Objective: to assess depression and other related factor that affecting exclusive breast feeding practice for among lactating mothers in Assosa town.

Method: community based cross-sectional study was conducted from much 1 to April ,1 2019 Assosa town, west Ethiopia. A total of 484 mothers were recruited by a multi-stage simple random sampling technique was applied. Data were collected through socio demographic, socio cultural, place of delivery, maternal depression which were assess by scale by BDI. . Bivariable logistic regression analyses were employed to identify associated variables and multi-variable logistic regression analysis was employed to identify independent predictors of exclusive breast feeding. All statistical tests were considered significant at $p\text{-value} < 0.05$.

Result: The overall practices of exclusive breast-feeding were 58.2%. Women's who had not Depression were 3.9 (AOR95%CI (2.5,6.1) more likely to practice exclusive breast feeding compare to those who had depression. Women's who delivered at health facility were 4.1 (AOR95%CI(2.6,5.3) times more likely to practice exclusive breast feeding compare to those who delivered at home. Women's who had 3 and above children were 3.08(AOR95%CI(2.1,5.3) times more likely to practice exclusive breast feeding compare to those who had less than 3 children.

Conclusion and recommendation: The study indicated higher level of suboptimal prevalence of exclusive breast feeding, which is further predicted by maternal depression, place of delivery and parity. Collaborative efforts have to be exerted at different levels, relevant stake holders, health providers together and the community.

Keywords: Exclusive breastfeeding, maternal depression Assosa town

1. INTRODUCTION

Exclusive breastfeeding (EBF) is the optimal feeding practice to achieve infants' growth and development. It is one of the strategies to improve nutritional status and growth in children. EBF can avoid the major causes of neonatal death such as sepsis, acute respiratory tract infections, meningitis, and diarrhea(1).

World Health Organization (WHO) and United Nations Children's Fund (UNICEF) recommend that all mothers should breastfeed their children exclusively for the first 6 months and thereafter they should continue to breastfeed for as long as the mother and child wish, and both appropriate and sufficient weaning food should be added after six months of life(2)

Breastfeeding offers a wide range of benefits for both the child and the mother. The benefits for the infant include a diminished risk of infectious diseases and obesity and decreased blood pressure for the mother, breastfeeding confers a lower risk of ovarian and breast cancers and decreased blood pressure(3).

In selecting depression factors to be measured in the current study, factors thought to be of most importance by participants were given priority over those thought to be of less importance. Preference was also given to factors signaling individual depression differences between women, as opposed to factors of a more social nature which may pose problems with modification as our ultimate goal. The decision process resulted in the selection of 15 depression factors for measurement: the woman's self-esteem, current life priorities, psychological reactance (motivation to regain lost or threatened personal freedoms), adaptability, optimism, and breast feeding as feeding self-efficacy, achievement striving, faith in breast milk, breastfeeding expectations, depression, anxiety, stress, time of decision, planned breastfeeding duration and mothering self-efficacy. Socio-demographic influences were measured and controlled. This list of factors included the woman's age, education, occupation, marital status, socio-economic status, parity, previous breastfeeding experience.(4)

Multiple benefits of breastfeeding for infants, mothers, and the economy. The benefits for infants include nutritionally balanced meals specific to the needs of the individual infant, protection against illnesses and diseases, higher rate of survival, and physical and emotional bonding. Mothers experience reduced risk of postpartum hemorrhage, depression, and certain cancers; and families save money that might otherwise be spent on formula and miss less work because children are healthier(5)

In the meantime, postpartum depression occurs within 1 year right after birth and is classified into postpartum blues, postpartum depression, and postpartum psychosis depending on the severity of depression symptoms. Rapid change of postnatal hormones, lack of sleep, burden and worry on nurturing are the causes of postpartum depression in which frequent change of mood, loss of appetite, sleeping disorder, low energy, severe anxiety, decrease of memory and concentration, lethargy, thoughts of suicide, and other depression symptoms are experienced. When these symptoms are severe, the mother becomes indifferent to the baby and negative emotions or thoughts to harm that the baby occur(6)

In low-income developing countries, diarrhea is a major public health problem. Annually, it kills about 2.2 million people, most of whom are infants or young children. Each year; there are approximately 4 billion cases of diarrhea worldwide. Diarrhea can be prevented by drinking boiled water, improving household sanitation, and ensuring personal and food hygiene. Key measures to treat diarrhea include oral rehydration and continued feeding. During infancy, these actions require the primary care giver, usually the mother, to be active, alert and fully responsive to the usually hostile environment in a poor community.(7)

Immediate and exclusive breastfeeding strengthens the immune system and provides the optimum nutrition for the newborn. Breast milk is not only the best source of nutrition in infancy, but may also impart protective effects against chronic disease in adulthood. Based on a, the World Health Organization (WHO) in its recent report "Exclusive Breastfeeding for Six Months Best for Babies Everywhere", stated that exclusive breastfeeding (no other food or liquid is given) for the first 6 months of life reduces the risk of gastrointestinal and respiratory infections in infants and assists with maternal weight loss after birth(8).

Postnatal depression (PND), functionally defined as a major depressive episode occurring within 12 months of giving birth has received a great deal of attention from psychologists due to its association with a range of detrimental outcomes in children(9)

Maternal mental health difficulties during the early postpartum period are main public health issues due to the ever- growing evidence of the negative impacts on children's cognitive, behavioral, and emotional development(10) .Maternal depression affects about 50% of women of childbearing age, which may contribute to the development of childhood obesity (11).

The impact of parental depression can last well past childhood. A 20-year follow-up of children of depressed parents compared them with a matched group of children of parents with no

psychiatric illness. The adult children of depressed parents had three times the rate of major depression, anxiety disorders, and substance abuse compared with children of non-depressed parents. In addition, children of depressed parents had higher rates of medical problems and premature mortality(12)Improving reproductive healthcare, addressing social determinants of PPD and creating access to mental health care through integration into existing primary care-based maternal health care may reduce the burden(13)

1.2. STATEMENT OF THE PROBLEM

Exclusive breastfeeding to six months of age has been one of the primary aims of nutrition and public health programs across the world (World Health Organization). Midwives and lactation consultants are actively engaged in attempting to increase women's rates of breastfeeding to at least six months' post-partum. Yet, in spite of these efforts, in Western countries, most women do not continue breastfeeding until six months postpartum these factors are discussed under the following headings: socio-demographic factors, biophysical factors, psychosocial factors and interventional factors. The factors that are potentially modifiable are the main focus of discussion.(14)

Global statistics show that the rate of exclusive breastfeeding in the first six months of life in developing countries was 36% between the years of 2007 and 2014 (5). Although breastfeeding is common in Turkey, exclusive breastfeeding in children has reduced to 30% from 42% in Turkey according to the Demographic and Health Survey(15)

Breastfeeding is globally accepted as the best infant feeding method for its economy and its immediate and long-term health benefits, including decreased risk of infection and diarrhea in the infant and reduced risk of type 2 diabetes and uterine and ovarian cancers in the mother. Difficulty with establishing and maintaining breastfeeding in the first days of an infant's life is common; 60% to 80% of women experience problems, and 42% of all women who attempt breastfeeding (90% of those with problems) quit within 6 weeks.(16)

Breastfeeding has been associated with the well-being of both the child and the mother. Breastfeeding benefits for children's physical and psychological status include decreased risk of infectious diseases and obesity, decreased blood pressure, lower cholesterol levels, and increased cognitive and motor performance. Positive health-outcomes for the mother's

physical health include decreased blood pressure and risk of breast and ovarian cancer; for the mother's psychological health they include attenuated stress response and enhanced sleep.(17) Currently, another issue that is as important as breast- milk and breastfeeding is the psychological health of mothers. Mothers should primarily have good physical and mental health to adequately take care of their babies and breastfeed them for long-term. Postpartum depression is an important health problem that affects a significant portion of women. Approximately 13% of women fall into depression in the first 12 weeks after delivery(15) Prevalence rates between northern and sub-Saharan African countries. The lowest average rates have been reported in Uganda (7.1%) and highest in Zimbabwe (33%). The majority of African countries have estimated prevalence rates higher than that those found in high-income countries(18)

Assessment of maternal depression and mental health is an integral part of antenatal services to ensure safe pregnancy and delivery. But developing countries lack such antenatal care (ANC) services; and even if available, lack coverage, quality or support from stake holders. In accordance with this fact, a study at Nottingham University notified that WHO has formulated a focused ANC guideline including women's mental health package to be used during ANC assessment. In addition to lack of available reports both at national and local study area of this study, higher prevalence rate of antenatal depressive disorders occurs at health care settings;(19)

Eight out of ten women may experience the postpartum blues, a transient disturbance of mood typically marked by mood lability; occasions of crying, irritability, and sleep disturbance that lasts about two weeks postpartum. In some women, the depressive symptoms do not resolve but persist and lead to post-partum depression. Epidemiologic studies have identified the prevalence of post-partum depression (PPD) as ranging between 10% and 20%. Approximately one in every 1,000 deliveries is followed by a psychotic episode.(20)

Low levels of both antenatal and postnatal social support are significant risk factors Of particular relevance are partner support, availability of people to depend on during pregnancy and the early postpartum, and a woman's relationships with her own parents , but not necessarily the absolute size of her social network (21)

There is wide variation in breastfeeding practices and duration among women of different races. In 2004, the CDC released data that showed that breastfeeding rates at 6 months were

highest among Asian women (16.1%), White (11.7%), Hispanic (11.6%), and lowest among Black women (7.9%)(22)

Breastfeeding is universal in Ethiopia. Ethiopian Demographic Health Survey 2016 indicates that only 58 percent of children under six months are exclusively breastfed despite the World Health Organization's recommendation of exclusive breastfeeding for up to the first 6 months of life(23). The aim of the current study was to assess the maternal depression and other related factors affecting Exclusive breastfeeding among lactating mothers Assosa town, Benishangul Gumuz region west, 2019

1.4.7. SIGNIFICANCE OF THE STUDY

The Mothers and children constitute the majority of the population and they are the more vulnerable groups. Breast-feeding is a natural resource, needs less energy for preparation. It provides holistic nutritional values for the infants and it is free of microbes. As a consequence of cessation of breast-feeding and early introduction of weaning diet common childhood diseases such as acute diarrhea arise and lead to high rate of morbidity and mortality in developing countries such as Ethiopia.

The prevalence of exclusive breast feeding and depression related factors were not determined in Benishangul Gumuz region but the prevalence of under one-year child mortality is high as the regional health bureau report indicated.

Little is known about exclusive breast feeding in Benishangul Gumuz region, and the prevalence of chronic mal nutrition was 45% whereas the national prevalence of chronic mal nutrition according to the Ethiopia demographic health survey 2016. This study is, thus conducted to assess the maternal depression and other factor affecting Exclusive breast feeding among lactating mothers in Assosa town, Benishangul Gumuz region west, in 2019. Thus Knowing, clarifying and evaluating of the factors related to the acquisition of exclusive breast feeding help in its prevention, reducing child hood mortality and morbidity. Also, the results of this study were helped government to be able to set a plan of action on enhancing exclusive breast feeding, leading to a healthy community and a healthy nation as a whole. Thus Assessing the magnitude of exclusive breast feeding and identifying the risk factors related to exclusive breast feeding help decision makers and concerned sectors to take immediate and concrete action to alleviate the challenge of early child hood mortality and morbidity. This study would give an overview of the problem and help policy makers to make decisions regarding policy and future planning especially in terms of health care provision to children less than one years of age by providing baseline information.

1.3. LITERATURE REVIEW

1.3.1. PREVALENCE OF BREAST FEEDING

Breastfeeding is globally accepted as the best infant feeding method for its economy and its immediate and long-term health benefits, including decreased risk of infection and diarrhea in the infant and reduced risk of type 2 diabetes and uterine and ovarian cancers in the mother. Difficulty with establishing and maintaining breastfeeding in the first days of an infant's life is common; 60% to 80% of women experience problems, and 42% of all women who attempt breastfeeding 90% of those with problems quit within 6 weeks. Although there are several studies of suboptimal breastfeeding duration, breast-feeding difficulties have received insufficient attention. Difficulty with breastfeeding is stressful. Early postpartum stress and anxiety are known risk factors for postpartum depression (16).

Low levels of both antenatal and postnatal social support are significant risk factors. Of particular relevance are partner support, availability of people to depend on during pregnancy and the early postpartum, and a woman's relationships with her own parents, but not necessarily the absolute size of her social network (21).

Breast feeders had lower depression and anger and more positive life events reported than formula-feeders. However, there were few correlations among stress, mood, and the hormones in postpartum mothers, and those only in formula-feeders, whereas strong relationships were found between serum ACTH and a number of stress and mood variables in control Postpartum mothers reported a range of stress and negative moods at 4 to 6 weeks, and in formula-feeders, serum prolactin was related to some of the stress and mood variables Breastfeeding appears to be somewhat protective of negative moods and stress(24).

Unbundle the infant and place skin-to-skin. Allow time for nuzzling and licking. During first feeding, ensure optimal latch. The infant should be breastfed on one side until no longer swallowing effectively. If the infant does not swallow, elicit swallows with breast compression and sublingual massage. When the infant stops swallowing on the first breast, switch the infant to the other side until no longer swallowing. The infant may not feed as well on the second side; assessment of swallows is more important than length of time at breast. Frequent breastfeeding does not cause nipple damage if the infant is correctly positioned and latched. Frequent breastfeeding has been associated with improved lactation outcomes. It also increases early milk production and infant weight gain(25). Showed marked differences between

depressed and well women during face to face play with their infants. The depressed mothers deviated from the normal pattern of interaction, where parents respond to infant cues by imitating and elaborating infant expressions and gestures and adjusting the timing and form of response to help regulate the infant's attention and affect(26).

Depression is common and costly, particularly for women in their childbearing years. The World Health Organization has identified major depression as the fourth leading cause of burden among all diseases, and the leading cause of years lived with disability. It is estimated that depression costs the United States \$30 billion to \$50 billion in lost productivity and direct medical costs each year. By 2020, depressive illness is expected to be the second leading cause of disability in the world that negatively affected child handling like exclusive breast feeding (27).

Delivered via cesarean birth suggest that they are more vulnerable to excessive weight loss (defined as weight loss of $\geq 10\%$ of birth weight) than infants delivered vaginally. For instance, one study of exclusively breastfed neonates found that a disproportionate 77% of infants with weight loss greater than 10% had been delivered via cesarean birth At the same time(28).

Breast feeding is an excellent way of feeding an infant. The successful breast feeding situation offers mother and child ample experiences of well-being and belonging together which serve to promote the mother child relationship. Breast feeding is a multilevel and unique psychophysical event influenced not only by the physiology of the mother and the child but also by the attitudes and values of the family and society(29).

The cross-sectional study conducted in Debretabor shows that the prevalence of exclusive breast feeding computed using 24-hour dietary recall method showed 70.8% of the participants practiced exclusive breast feeding appropriate age of their child. The 78.6% of the mothers initiated breastfeeding within one hour of birth, 97.3% had fed colostrum, and 25.6% of mothers gave one or more pre lacteal feeds (39).

1.3.2. SOCIO DEMOGRAPHIC AND ECONOMIC FACTOR

On the whole, the rate of breastfeeding initiation in may be judged satisfactory, with some demographical differences. The data emphasize the major roles of sociocultural background and correct information about breastfeeding. Much work remains to be done in order to increase the duration of breastfeeding. Furthermore, factors associated with breastfeeding

duration are also implicated in breastfeeding initiation; various social and environmental peculiarities remain unfavorable to the widespread practice of breastfeeding. The early administration of formula supplements in the maternity ward may contribute to this unfavorable environment. Mothers should be provided continuous support to pt. for and maintain nursing, and not just in the hospital environment. Campaigns aimed at improving nursing should mainly be directed towards less socially advantaged women. The improvement of information, which should include antenatal courses, nursing guidance in the ward and a pediatrician's follow-up, should be aimed at persuading more mothers to nurse and maintain breastfeeding throughout the first year of life(30)

1.3.3. SOCIO CULTURAL RELATED FACTOR

The Behavior was considering planning frameworks for health promotion interventions, in particular the Ottawa Charter for Health Promotion. This identifies five types of interventions: developing personal skills, reorienting health services, creating supportive environments, developing healthy public policy and strengthening community action. Such actions are variously directed to modifying individual and personal factors, but more so to modify the environments in which individuals live and breastfeed. Consequently, we developed a conceptual framework for understanding the influences on breastfeeding that incorporates a variety of elements of relevant theories for understanding health behavior and for planning effective public health interventions to influence health behavior. Individual level factors relate directly to the mother, infant, and the 'mother-infant dyad'. They include the mother's intention to breastfeed, her knowledge, skills and parenting experience, the birth experience, health and risk status of mothers and infants, and the nature of early interaction between mother and infant. Each of these can directly influence the initiation and duration of breastfeeding, and are frequently correlated with social and demographic variables (31).

Human individual's express different behaviors in order to feel well and to avoid tension and stress. Some of these behaviors are maladaptive and could be regarded as expressions of abuse, whereas others clearly represent healthy and natural ways of achieving every day wellbeing and relief from stress. A common denominator of several of the natural "soothing mechanisms" is that they often involve some type of sensory stimulation of skin or mucosa. Oxytocin, released within the brain from oxytocinergic nerves emanating from the par ventricular nucleus

in response to such sensory stimuli, is of crucial importance for the positive effects linked to these self-soothing behaviors. Oxytocin may, e.g., induce wellbeing by stimulation of dopamine release in the nucleus accumbens, increase social interaction and decrease anxiety by actions in the amygdala, decrease stress reactions by actions in the hypothalamic-pituitary-adrenal axis and by decreasing noradrenergic release in the locus ceruleus and nucleus tractus solitarius. Oxytocin may also decrease the sensitivity to pain by increasing opioidergic activity in the periaqueductal gray. Oxytocin also modulates serotonergic activity. Oxytocin is released in response to activation of sensory nerves not only during labor and breastfeeding, but also in response to skin-to-skin contact between mothers and infants, during sexual intercourse in both sexes, in connection with positive, warm interactions between humans and interaction between humans and animals, in response to several kinds of massage and even in response to suckling and food intake. The present article will be restricted to self-soothing mechanisms linked to oxytocin release in response to sensory stimulation and, in particular, to somatosensory stimulation. This is not to restrict the importance of stimuli mediated by the (32).

1.3.4. HEALTH RELATED FACTORS

Mothers were asked about prenatal care, in-hospital care and care from the baby's pediatrician. The role of fathers in making breastfeeding decisions was also explored. They reported that most men felt the decision was ultimately the mother's since it was her body. Breastfeeding is universal in Ethiopia. Ethiopian Demographic Health Survey 2016 indicates that only 58 percent of children under six months are exclusively breastfed despite the World Health Organization's recommendation of exclusive breastfeeding for up to the first 6 months of life(23).

Men expressed their opinions, provided physical and emotional support, but left the final decision concerning initiation and duration of breastfeeding to their wife. In general, mothers reported that the education and support they received was not adequate. Fathers relied on the mother to make decisions pertaining to breast feeding. Reported that the most common reasons mothers gave for initiating breastfeeding were the benefits of breast milk (54%), mother-led reasons such as to promote bonding (18%) and encouragement from others (health-care professionals, family and friends, 15%). Mothers with higher scores on the Italian version of

the Iowa Infant Feeding Attitudes Survey were more likely to be breastfeeding at 12 months. Higher scores on the IIFAS correlated with more positive views of breastfeeding(33). The prevalence of exclusive breast feeding was 305(82.2%). The actual practice of exclusive breast feeding was 305(82.2%). Among the total variables which were included in the analysis only three variables show positive association with mothers EBF status. These are knowledge of EBF, ANC follow up and women occupation. House wife women were two times more likely exclusively breast feed their child compared to those employed(34)

The Study showed that a number of psychosocial factors were independent predictors of the duration of breastfeeding and they are therefore useful for identification of mothers at risk of early breastfeeding cessation. The association between intended and actual duration of breastfeeding has been described in previous studies(35)

1.4.6. DEPRESSION RELATED FACTORS

Recently depression and self-efficacy have received considerable attention as a predictor of health-related behaviors. Defined as an individual's confidence in his or her perceived ability to perform a specific task or behavior, self-efficacy is composed of two parts: outcome expectancy, the belief that a given behavior will produce a particular outcome, and self-efficacy expectancy, an individual's conviction that one can successfully perform certain tasks or behaviors to produce the desired outcome. This distinction is important because individuals may believe that a certain behavior will assist them in accomplishing a specific outcome. Postnatal depression is the most pervasive complications of child bearing and the strongest predictors of social and economic disadvantage and gender-based factors, particularly gender-based violence (36).

1.5. CONCEPTUAL FRAMEWORK OF THE THESIS

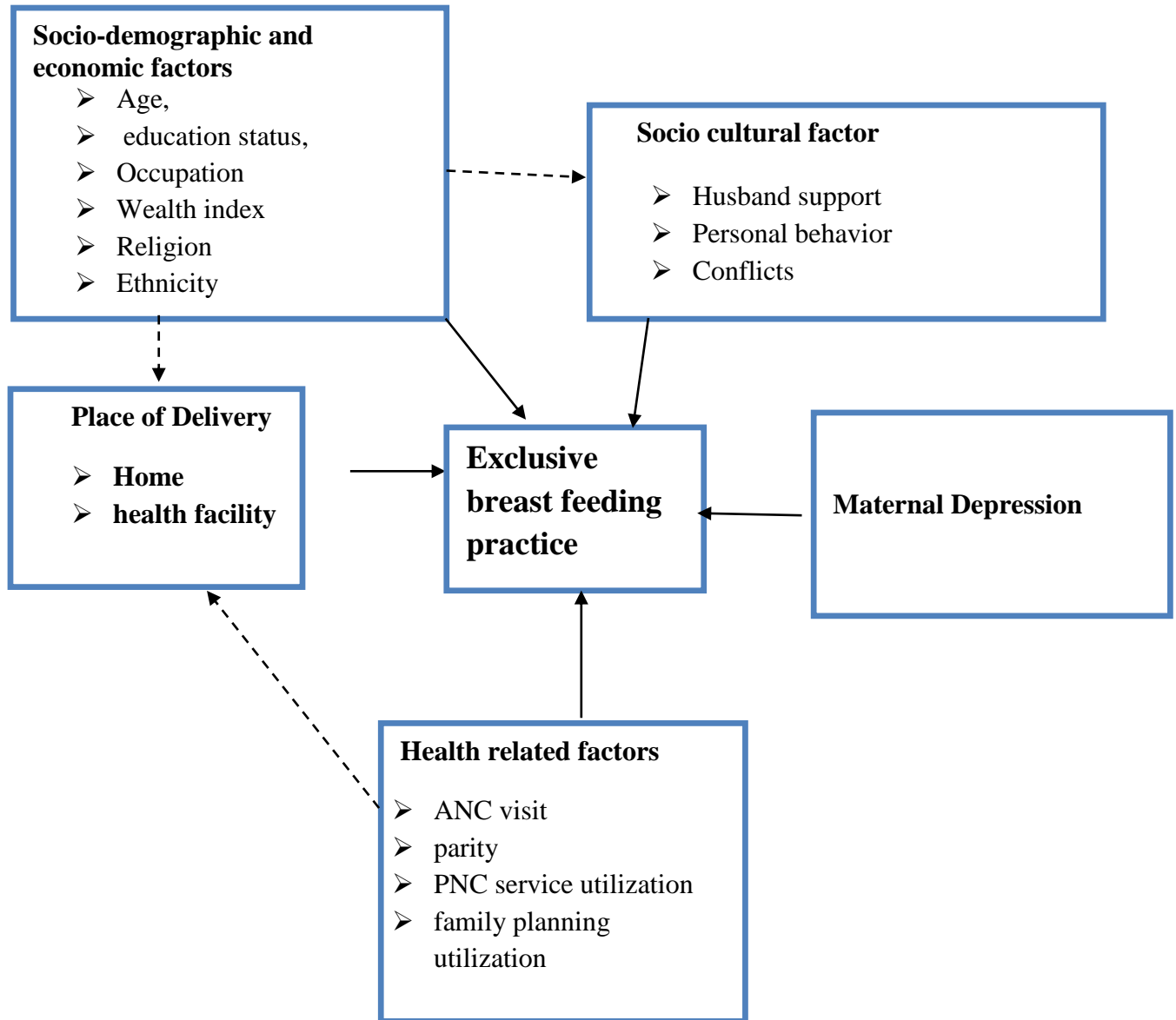


Figure 1. The diagrammatic representation of conceptual frame work factors adapted from different literature reviews

CHAPTER THREE: OBJECTIVES

3.1. GENERAL OBJECTIVES

- To assess the maternal depression and other related factors that affect Exclusive breastfeeding for age among women in Assosa town, Benishangul Gumuz region west, 2019.

3.2. SPECIFIC OBJECTIVES

- To assess the prevalence of Exclusive breast feeding women in Assosa town.
- To identify maternal depression and other associated factors that affect breast feeding.

CHAPTER FOUR: METHODS AND MATERIALS

4.1. STUDY DESIGN AND PERIOD:

Community based cross-sectional study design were conducted from the March 1to April 1 2019

4.2. STUDY AREA:

Assosa town administrative is one of the three zones of Benishangul Gumuz Regional State. Assosa is bordered on the south by the Mao-Komo special woreda, on the west by Sudan, and on the northeast by the Kamash zone and it is found from Addis Ababa at 665km. the altitude of it ranges from 580-1668 m above sea level. Among the region population, Based on conversion factor the population of the zone estimated 477852 and the total breast feeding women estimated to be 12885. According to the annual report of the zone in 2018 G.C. the health coverage is 86% calculated based on health facility to Kebele and the in Assosa town administrative from both Assosa general hospital and Assosa health center about total of 1960 breast feeding women is found.

4.3 TARGET POPULATION:

All lactating mothers with less than one year children who live in Assosa town

4.4. STUDY POPULATION:

All randomly selected breast feeding mothers with under one children

4.5. SAMPLE SIZE DETERMINATION

The number sample size was calculated using the following single population proportion formula based on the previous study The prevalence of age appropriate exclusive breast feeding in Debretabor town, North West Ethiopia was 70.8% (1) with the assumption of 0.05 marginal error (d) to maximize the size of the sample, a standard Z score of 1.96 corresponding to 95% confidence interval ($Z_{/2}$), design effect of 1.5 to provide correction for the loss of sampling efficiency resulting from the use of multistage sampling and 5% none response rate

$$n = \frac{(Z_{/2})^2 P (1-P)}{d^2} = \frac{(1.96)^2 0.708 \times 0.297}{(0.05)^2}$$

According to the single population proportion prevalence formula the finale sample size

$$\text{was} = 323 \times 1.5 = 484$$

The were the designee of double population proportion formula used to address the factors

$$N = 2 \times \frac{(p_1)(1-p_1)Z_{\beta} + 2\alpha / 2}{2}$$

P1-p2

Table 1: Shows the factors sample size from the previous study of significant association to exclusive breast feeding (20).

Variable	power	CI	Proportio	Sample
		AOR	n	size(n)
ANC follow up	80	95% 8.5	0.85	174
Place of delivery	80	95% 7.6	0.79	128
Gravidity	80	95% 8.5	0.60	64

4.6 STUDY VARIABLE

4.6.1 DEPENDENT VARIABLES:

Exclusive breast feeding

4.6.2 INDEPENDENT VARIABLE

- Age
- Income,
- Marital status
- Occupation
- Parity.
- Substance abuse,
- Family history of mother,
- Gravidity,
- Antenatal care
- Educational status
- Maternal depression

4.7 SAMPLING PROCEDURES

Multi stage sampling was conducted in Assosa town that had two woreda, first woreda have 3 kebele and second woreda held 2 kebele, within this town included five kebele. From both woreda 2 kebele from each were selected randomly by lottery method. About 1960 lactating mothers under one-year child found in Assosa town that were registered in each kebele by the help of health extension worker. Accordingly, from selected kebele it was adjusted proportionally allocated for their sample size. Finally, 484 under one year children breast feeding mothers were selected by using micro soft excel. If there is more than one under one child in a house hold, only one included by lottery method.

Sampling procedures of the study

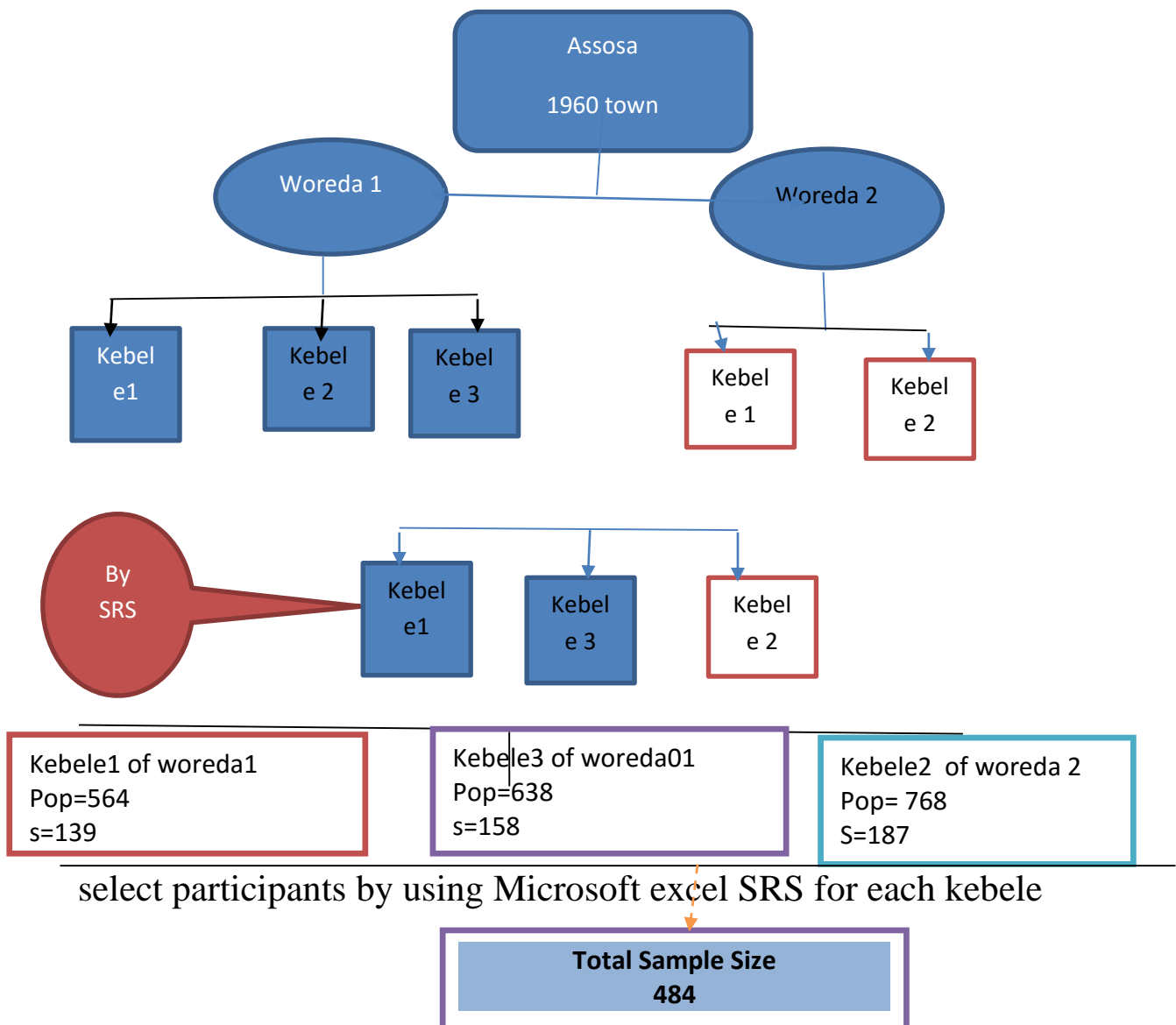


Figure 3 :The diagrammatic sample size selection of from the woreda of Assosa zone 2019

3.8.5. DATA COLLECTION PROCEDURES (INSTRUMENT, PERSONNEL, DATA QUALITY CONTROL)

Data were collected quantitatively using pre-tested and standardized questionnaires. The questionnaires were prepared in English and translated to local language “Amharic ‘Trained data collectors and supervisors were collected the data. Principal investigator also supervised and follow up the data collection process. Based on sampling procedure in the households, the mother was interviewed.

4.8 MEASURING INSTRUMENTS AND MEASUREMENTS

The data was collected using a standardized questionnaire consisting of the Beck depression scale (BDI), it is widely used to measure the depression status during the exclusive breast feeding period. It is composed of 21 variables scaled out of 63, each item scores in 0 to 3 scores. Item 0, 1, 2 and 3 scores are arranged from zero to three. The other items scores are arranged from three to zero. The total score is calculated by adding together the scores for each of the 21 item. Based on their cut off point, depression was classified as mild, moderate, severe and very severe.

4.9 INCLUSION AND EXCLUSION CRITERIA

- All breast feeding women who have 0 to 12-month child was included.
- Lactating women, who were critically ill and could not communicate were excluded from the study

4.10 DATA ANALYSIS PROCEDURES

Data was entered in to **SPSS** version 20. Data clearance and analysis was conducted. Bivariate analysis of associations between risk factors and outcome variables was conducted using chi square tests. Bivariable logistic regression was employed to get candidate variables with a p-value of <0.25 were kept in the subsequent model analysis. Multiple Logistic regression then performed to minimize confounders and identify significant predictors with a p value <0.05.

4.11 DATA QUALITY MANAGEMENT

Pre-testing was conducted in similar Kebele of similar settings but which are not part of the study. Then needed adjustments were made after the pre-test. Training was conducted for the

data collectors. During the training they were practice on how to complete the questionnaires. Close supervision was carried out by the principal investigators during the data collection. Some of the collected data were assessed daily for the completeness that was for correction in the next days.

4.12 TERM AND OPERATIONAL DEFINITION

Exclusive breastfeeding for age : Providing infant with no food or drink other than human milk; excludes medications and vitamins for their age(37).

Parity: the number of live children

Gravidity; the number of pregnancy

Prenatal: The time period during pregnancy and before birth(38)

Supplementation: Replacement of human milk feeds with breast milk substitutes(39)

Maternal Depression: the respondent who score greater than 17 out of the 63 Becks depression inventory scale labeled as the depression problems

Antenatal care: the health services that given during pregnancy for the well-being of the mother and the fetus(40)

Postnatal care:- the mater natal care given after delivery (41)

4.13 ETHICAL CONSIDERATION

Ethical clearance was obtained from the respective institute of public health, Jima University and Benishangul Gumuz Regional Health Bureau ethical committees. A formal letter was also submitted to all the concerned bodies to obtain their co-operation. All the participants were asked their consent. Confidentiality was assured and no personal details identifiers were recorded or produced on any documentation related to the study. Those diagnosed mothers who had depression based on BDI were linked to health facility.

4.14 DISSEMINATION OF STUDY FINDING

- The finding of the study will be present and disseminate to Jimma university institute of health
- Benishangul gumuz health bureau and health facilities
- different stakeholders that have a contribution to improve PPD
- present in different symposium and publish in reputable journals
- Hard and soft copies of the thesis will be made available in the library of Jimma University for readers.

CHAPTER FIVE: RESULT

5.1 socio demographic and cultural factors

The total of four hundred and seventy-seven lactating mothers was recruited in the study and 450 respondents completed with a response rate of 95%. The mean age of the participants was 28.4 ± 5.4 years. Among the study participants 147(32.7%) were less or equal to 25years. According to age of infants, 285(63%) were 4-12 months. The mean age of the children was 6 ± 4.75 months. Males were 51.5% among total study mothers s' children. Regarding to mother occupation, 231(51.3 %) were housewives, and the rest 25.8%, 22.9% were government workers and merchant respectively.

Regarding to religion, Muslims were 202(44.9%), orthodox and protestant [176(39.1%), 55(12.2%)] followed respectively. The Four Major Ethnic groups were identified of which, Amhara, Berta and Oromo constitutes 32.4%, 32.2% and 26% respectively.

Among the study subjects 71% were attended formal education. Around 95.5 percent of the respondents were married. Moreover, 60.4% of lactating mothers were not get support from her husband.

Table 2: Socio demographic and cultural variables of lactating mothers in Assosa town west, Ethiopia, 2019

Variables		Frequency N=450	Percentage (%)
Age of the mothers	<=25 years	147	32.7
	26-30 years	166	36.9
	>=31 years	137	30.4
Ethnicity	Amhara	146	32.4
	Oromo	117	26.0
	Berta	145	32.2
	Others	42	9.3

Marital status	Married	429	95.3
	Divorced	14	3.1
	Widowed	7	1.6
Age of the child in month	0-3 month	165	36.7
	4-6 month	135	30.0
	7-12 month	150	33.3
Educational status	Educated	320	71.1
	Un educated	130	28.9
Husband support	Yes	178	39.6
	No	272	60.4

5.2 Health related factors

The overall exclusive breastfeeding practice prevalence among the study the respondent was 58.2% with the 95%(53.8, 63.9). 58% of the mothers were followed ANC visit and 61.6% the mothers were attended post-natal care after delivery. 331 (73.6%) of the mothers were given birth in health facilities for delivery. Among the study subjects there were about 274(60.9%) the mothers had husband support for exclusive breast feeding of their child's practice

Table 3: The maternal health related characteristics among lactating mother in ; Assosa town west Ethiopia, 2019.

Variables		Frequency	Percentage (%)
ANC follow up	Yes	261	58.0
	No	189	42.0
PNC follow up	Yes	277	61.6
	No	173	38.4
Place of birth /delivery/	Health facility	331	73.6
	Home	119	26.4

Mod of delivery	Spontaneous	345	76.7
	Assisted	105	23.3
Parity	<3	335	74.4
	>3	115	25.6
	No	288	64.4

5.3. postnatal depression related factors

Among the study subjects 295(65.6%) were free from postnatal depression, 66(14.7%) of the respondent had mild depression ,17(3.8%) of the participants were found at the border line of depression. Whereas, 51(11.3%) and 12(2.7%) of the participants had moderate and severe depression respectively.

The overall prevalence of postnatal depression among the study participants were 20.2.

Table 4: The Frequency distribution of psychosocial factors related among lactating mother of the study; Assosa west Ethiopia, 2019.

Scale of depression	Type of psychosocial factors	Frequency	Percent
0-10 score	Normal	295	65.6
11-16score	Mild	66	14.7
17-20score	Borderline psychosocial	17	3.8
21-30score	Moderate depression	51	11.3
31-40score	Severe depression	12	2.7
>=41score	Extreme depression	9	2.0

Bivariable logistic regression for candidate variables for breast feeding practices

nine Candidate variables that were draw from Bivariable logistic regression analyzed each risk factors with dependent variable from socio-demographic and cultural, health related factors.

Accordingly, occupation of the mother, educational status, wealth index, husband support, postnatal care, parity, home delivery, postnatal depression and antenatal care visits were significant association with the dependent variable with $P < 0.25$.

Table 5: Bivariable logistic regression for candidate variables for breast feeding practices

Variables	category	Exclusive breastfeeding		P value	COR (95%CI
		Yes	No		
Occupation	Gov't	96	20	0.27	0.45(0.2,1.9)
	Merchant	45	58	0.14	0.7(0.4,1.1)
	House-wife	121	110	1	1
Wealth index	Low	121	20	0.001	3.4(1.9,6)
	Medium	101	57	0.56	16(9.2,30)
	High	40	111	1	1
Depression	No	133	97	0.001	4.1(2.3,7.2)
	Yes	55	165	1	1
Place of delivery	H/f	223	108	0.06	4.2(1.9,6.1)
	Home	39	80	1	1
PNC	Yes	96	181	0.12	0.46(0.3,0.6)
	No	92	81	1	1
ANC	Yes	64	197	0.058	0.17(0.1,0.25)
	No	124	65	1	1

Husband support	Yes	97	171	0.001	0.56(0.3,0.7)
	No	91	91	1	1
Educational status	Formal	133	97	0.21	1.6(1.01, 3.36)
	Informal	55	65	1	1
Parity	≥3 child	91	60	0.18	3.15 (2, 7.8)
	<3 child	97	202	1	1

5.6 risk factors of breast feeding practices in multi-variable logistic regression

Multivariable logistic regression analysis indicated that maternal depression, parity and place of delivery were significant factors for breast feeding.

Women's who had not Depression were 3.9 more likely to practice exclusive breast feeding compare to those who had depression.

Women's who delivered at health facility were 4.1 times more likely to practice exclusive breast feeding compare to those who delivered at home.

Women's who had 3 and above children were 3.08 times more likely to practice exclusive breast feeding compare to those who had less than 3 children.

Table 6: risk factors of breast feeding practices in multi-variable logistic regression

Variables	Category	Exclusive breastfeeding feeding		P value	COR with 95%CI	AOR with 95%CI
		Yes	No			
Depression	No	133	97	0.001	4.1	3.9(2.5,6.1)
	Yes	55	165	1		1
Place of delivery	H/f	223	108	0.001	4.2	4.1(2.6,7.2)
	Home	39	80	1		1
Parity	≥3 child	91	60	0.007	3.15	3.08 (2.1, 5.3)
	<3 child	97	202	1		1

CHAPTER SIX: DISCUSSION

The Breastfeeding is globally accepted as the best infant feeding method for its economy and its immediate and long-term health benefits, including decreased risk of infection and diarrhea in the infant and reduced risk of type 2 diabetes and uterine and ovarian cancers in the mother(42)

The current study shows that the prevalence of exclusive breast feeding was 58.2%.this finding was consistent with study conducted in debramarkos which counts 60% (41) and the EDHS, 2016 study, Ethiopian Demographic Health Survey indicates that 58% of children under six months are exclusively breastfed despite that World Health Organization's recommendation of exclusive breastfeeding for all children up to the first 6 months of age (23), 58% of the study conducted in the Chana(43),and 50% of prevalence of study conducted in the brazil this congruency might be due to the data quality as well as the representatives of the sample size selection. In contrast this study was higher compared with study conducted in Addis Ababa only 44.2% of the mothers practiced EBF(44) and also in Kamba woreda in southern Ethiopia counts 40.6% practiced exclusive breast feeding (45), Saudi Arabia of 34.1%(12). This discrepancy might be due to methodological difference. This finding was less compare with the study conducted in Debretabor town shows that 70.8% of the participants practiced exclusive breast feeding appropriate age of their child. (1),78% of prevalence of the study conducted at Nigeria(46), 73% of the prevalence of the study conducted at Italy(47)and ,88% of prevalence of the study conducted at Denmark(48). The possible difference might be different study population in cultural as well as socio economic level and educational level.

In the current study shows that parity more than 3 were more likely to practice exclusive breast feeding and it is support by study done in gonder 3.48times more AOR 95% CI (1.88,6.33) (49), 1.32 times more AOR 1.32(1.01,1.74) in brazil(50),and 1.4 times(AOR95%CI 1.01,3.06) to exclusive breast feeding practice than those women those has children less than three. the possible explanation is using the same methodology and when women had more experience consider that the quality of milk and sufficient, a reason for most mothers not to prematurely cease breastfeeding and introducing other foods before six months.

In the current study demonstrate that women those had get delivery at health institution were 4.2 times more than those had get delivery at the home and this finding consistence with the

study done in Boditi town 5.030times more (AOR 95% CI 1.6,7.4) (37) study done in Debra tabor 3.8 times more (AOR95%CI 2,1,7.2)(1),study done in bahir dar 3.02 times more to practice exclusive breast feeding(51) ,study done in the in the Chana is 3.4 time (AOR95% CI 1.75,6.62) (52).and study done in Addis abeba is 1.86 more to practice (AOR 1.86 95% CI 1.19,2.89)to practice exclusive breast feeding than those deliver at home.

The possible reason could be This might be because mothers get counseling and advice when they give birth at the health facility and understand the rationale behind exclusive breast feeding. and mothers who gave birth by the help of health care provider might get the opportunity to be counseled by the delivery attendant on the benefits of early initiation and maintenance of breast feeding. colostrum feeding, proper positioning, and attachment.

In the current study the women those don't had depression were 3.9 times more to practice exclusive breast feeding than those have depression and this study is supported with the study done in Chana 3.8 times (AOR 95%CI 3.5,7.1)(53),2.3 times (AOR 95% CI 1.6,3.1) in the study conducted in the Palestine (7) 2.5 times (AOR 95% CI 1.8,4.2 in the study done in the Netherlands and 1.8 times (AOR 95% CI 1.2,4.3) in the study conducted in the Bangladesh(54). the possible expansion might depression make the women not to focus to their infant

6. LIMITATION

- This study lacks qualitative data
- It was better if Data collection performed by psychiatry nurse
- Financial problem
- Study isn't about causality rather than prevalence
- Study is not comparative kind of study design

CHAPTER SEVEN: CONCLUSION AND RECOMMENDATION

7.1 Conclusion

The present study was aimed at assessing the maternal depression and other related factors that affect Exclusive breastfeeding for age among women in Assosa town, Benishangul Gumuz region west, 2019. The study indicated suboptimal prevalence of exclusive breast feeding, which is further predicted by maternal depression, place of delivery and parity.

7.2 Recommendation

The findings of study the following recommendations were forwarded:

FOR MINISTRY OF HEALTH

- ❖ Federal ministry of health should give emphasis on early identifying the depression and develop management protocol.

FOR REGIONAL HEALTH BUREAU

- Should better to establish baby friendly hospital initiative to improve exclusive breast feeding aware ness and practice
- Should establish community base strategy that promote exclusive breast feeding with in the community which is facilitate by health extension worker

For Assosa town health, admintrative

- Through health extension program, different public forum and medias should promote public awareness about exclusive breast feeding
- should educated women to attend delivery at health facility
- Heath professionals should screen maternal depression by BDI early.

For Parents and women

- Husband should support her wife to feed their child exclusively for 6 month

- In order for mothers to exclusively breastfeed their babies, mothers require to appreciate the reasons that exclusive breastfeeding is best and they require to get positive messages about exclusive breastfeeding from friends and family members.
- Women should deliver their child in health facility

➤ **For Researchers**

More extensive research should be done with large sample size and using another way of methodology.

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9. ANNEX

Annex I: participant information sheet (English)

9.1 Introduction and informed consent form

Hello, my name is ----- . I am serving as data collector on the behalf of Jima University College of Medicine and Health Science, Department nutrition in 19human health and community health to assist the investigator Abdulfeta Abdurehim to obtain information for the investigation of prevalence and risk factors related to exclusive breast feeding among children one years old. You have been selected to participate in this study because you are the mother of children less than five years old. You will be one of approximately 484 people who will participate in this study. Your participation in this study is voluntary. There is no penalty if you refuse to participate in this study. Your participation will involve face to face interview with the duration of 20 minutes. You can skip any questions you don't want to answer or even stop the interview. Your participation in the study poses no risk for you. The information received from you is important for the study. There is no direct benefit from the participation in this study, but your participation will contribute to better understanding of risk factors of exclusive breast feeding. The information provided by you fully confidential and will be used only for the study. Your name will not appear on the questionnaire. Only the general findings will be presented in the report. If you have any questions regarding this study you can contact the Principal Investigator Abdulfetahabdurehimby email abdulfetah.abdurehim@gmail.com,

Phone: cell [09 19470586](tel:0919470586)

Do you agree to participate?

Thank you. If no, thank her and skip to other participants

If yes, shall we continue?

Interviewers' name _____

Date _____

Signature _____

9.2. Questioner

Questioner of maternal depression and its associated factor with breast feeding women

Socio demographic status of mother

101	What is Residence	1.Urba 2. Rural
102	How old are you?)
103	What is you lively Occupation ?	-----
104	What is your religion?	1.Muslim 2.orthodox 3.protestant 4.catholic 5.Others(specify)_____
105	What is Ethnicity?	1.Berta 2.Amhara 3.Oromo 4.Tigre 5.Gurage 6.Gumuz 7.shinasha 8.other.....
106	What is your monthly gross income?	_____
106	What is Educational status?	1.Educated 2.Uneducated
107	What is your Marital status?	1. Married 2.Single 3.Divorced

		4. Widowed 5. Others ; _____
108	What is your child sex?	_____ Years

Family history of mother

100	At what frequency you feed breast milk per day?	1.<4times 2.>=4time 4.othe, specify-----
111	Have you ever or currently practice exclusive breast feed your child until six month of age?	1. Yes 2. No
	IF yes fore what reasons practice breast feeding?	_____
112	Have you ever or currently use family planning?	1. Yes 2.No
113	Have you ever heard about exclusive breast feeding?	1. Yes 2. No
114	Does your husband support you when you practice breast feeding?	1. Yes 2. No
115	What is the age of your child	1.0-3month 2.4-6month 3.7-12month 4.others
116	Do you give something to your child in the first day of delivery?	1. Yes 2.No
	If yes for what reasons	-----
117	When you feed breast milk your child?	-----
118	Do you know the exact duration of exclusive breast feeding?	
119	If yes for how long?	1.<6month 2.>=6month

120	Do you know the importance of exclusive breast feeding?	1.yes 2.no
121	What you know about importance of exclusive breast feeding?	-----
122	Have you ever or currently smoke sigaret	1.yes 2.no

116	For how many months are you Breast feed?Months
117	When you got pregnant, did you want to get pregnant at that time?	1.Yes 2. No
118	Did you want to have a baby later on or did you not want any (more) children?	1.Yes 2.No 3. I cannot decide now 4. It is not my decision
119	How many months pregnant were you when birth the childMonths
120	How many times did you receive antenatal care visit during the last pregnancy?Number of Visits
121	Is there anyone else living with you to support you including your husband? if married	1. Yes 2. No
122	do you had conflict with your husband during breast feeding? If married	1.Yes 2. No
123	Do you have a history of intimate partner violence (e.g. verbal, sexual, physical)	1.Yes 2. No
124	Have you ever felt anxiety, stress or unhappiness during this pregnancy	1.Yes 2. No

125	Have you ever felt anxiety, unhappiness during or from previous Pregnancystress or previous breast feeding	1. Yes 2. No
126	Which of the following Major life event that lasts for long period of time, you ever faced?	1. Death of intimate family member 2. Fire accident 3. Chronic illness 4. Noany 5. Other specify_____

Part III Information BDI maternal depression scale

This depression inventory can be self-scored. The scoring scale is at the end of the questionnaire. 1.

0 I do not feel sad.

1 I feel sad

2 I am sad all the time and I can't snap out of it.

3 I am so sad and unhappy that I can't stand it.

2.

0 I am not particularly discouraged about the future.

1 I feel discouraged about the future.

2 I feel I have nothing to look forward to.

3 I feel the future is hopeless and that things cannot improve.

3.

0 I do not feel like a failure.

I feel I have failed more than the average person.

2 As I look back on my life, all I can see is a lot of failures.

3 I feel I am a complete failure as a person.

4.

0 I get as much satisfaction out of things as I used to.

I don't enjoy things the way I used to.

2 I don't get real satisfaction out of anything anymore.

3 I am dissatisfied or bored with everything.

5.

0 I don't feel particularly guilty

I feel guilty a good part of the time.

2 I feel quite guilty most of the time.

3 I feel guilty all of the time.

6.

0 I don't feel I am being punished.

I feel I may be punished.

2 I expect to be punished.

3 I feel I am being punished.

7.

0 I don't feel disappointed in myself.

1 I am disappointed in myself.

2 am disgusted with myself.

3 I hate myself.

8.

0 I don't feel I am any worse than anybody else.

I am critical of myself for my weaknesses or mistakes.

2 I blame myself all the time for my faults.

3 I blame myself for everything bad that happens.

9.

0 I don't have any thoughts of killing myself.

I have thoughts of killing myself, but I would not carry them out.

2 I would like to kill myself.

3 I would kill myself if I had the chance.

10.

0 I don't cry any more than usual.

1 I cry more now than I used to.

2 I cry all the time now.

3 I used to be able to cry, but now I can't cry even though I want to.

11.

0 I am no more irritated by things than I ever was.

1 I am slightly more irritated now than usual.

2 I am quite annoyed or irritated a good deal of the time.

3 I feel irritated all the time.

12.

0 I have not lost interest in other people.

1 I am less interested in other people than I used to be.

2 I have lost most of my interest in other people.

3 I have lost all of my interest in other people.

13.

0 I make decisions about as well as I ever could.

1 I put off making decisions more than I used to.

2 I have greater difficulty in making decisions more than I used to.

3 I can't make decisions at all anymore.

14.

0 I don't feel that I look any worse than I used to.

1 I am worried that I am looking old or unattractive.

2 I feel there are permanent changes in my appearance that make me look unattractive

3 I believe that I look ugly.

15.

0 I can work about as well as before.

1 It takes an extra effort to get started at doing something.

2 I have to push myself very hard to do anything.

3 I can't do any work at all.

16.

0 I can sleep as well as usual.

1 I don't sleep as well as I used to.

2 I wake up 1-2 hours earlier than usual and find it hard to get back to sleep.

3 I wake up several hours earlier than I used to and cannot get back to sleep.

17.

0 I don't get more tired than usual.

1 I get tired more easily than I used to.

2 I get tired from doing almost anything.

3 I am too tired to do anything.

18.

0 My appetite is no worse than usual.

1 My appetite is not as good as it used to be.

2 My appetite is much worse now.

3 I have no appetite at all anymore.

19.

0 I haven't lost much weight, if any, lately.

1 I have lost more than five pounds.

2 I have lost more than ten pounds.

3 I have lost more than fifteen pounds.

20.

0 I am no more worried about my health than usual.

1 I am worried about physical problems like aches, pains, upset stomach, or constipation.

2 I am very worried about physical problems and it's hard to think of much else.

3 I am so worried about my physical problems that I cannot think of anything else.

21.

0 I have not noticed any recent change in my interest in sex.

1 I am less interested in sex than I used to be.

2 I have almost no interest in sex.

3 I have lost interest in sex completely.

INTERPRETING THE BECK DEPRESSION INVENTORY

Now that you have completed the questionnaire, add up the score for each of the twenty-one questions by counting the number to the right of each question you marked. The highest possible total for the whole test would be sixty-three. This would mean you circled number three on all twenty-one questions. Since the lowest possible score for each question is zero, the lowest possible score for the test would be zero. This would mean you circles zero on each question. You can evaluate your depression according to the Table below.

Total Score _____	Levels of Depression
1-10 _____	These ups and downs are considered normal
11-16 _____	Mild mood disturbance
17-20 _____	Borderline clinical depression
21-30 _____	Moderate depression
31-40 _____	Severe depression
over 40 _____	Extreme depression

PART IV - Information on Substance abuse

No	question	coding category
400	Did you have any close relationship or association with one or more khat chewers?	1.Yes 2. No
401	Have you ever chewed khat?	1. Yes 2. No→
402	How old were you when you started chewing khat?	Age -----
403	Before this pregnancy, how frequent is your chat chewing habit for a typical week?	1. Once per week 2. 2-4 days per week 3. 4-6 days per week 4.Daily 5.Occasionally (specify)_____ -
404	How frequent is your chat chewing habit since you became pregnant?	1. Once per week 2. 2-4 days per week 3. 4-6 days per week 4.Daily 5. Occasionally (specify)_____ -
405	What are the reasons for your chewing khat? (more than one answer is possible)	1.Recreational 2.Medicinal 3.Habit 4. For socialization 5. For avoiding stress 6.Other(specify)_____ _____

406	Do you take alcohol after chewing khat?	1.Yes 2. No
407	Have you tried quitting khat?	1.Yes 2. No
408	What do you think are the major problems associated with Chat use? (more than one answer is possible)	1. Financial crisis 2. Social relationship problem 3. Physical health problem 4. 4.Psychological/mental health problem 5. 5.Reproductive/fertility health problem 6. 6.Sexual weakness/impotence 7. Exposure to other harmful habits related to Chat use (smoking/drinking) 8.Other/specify_____

409	Have you ever smoked any tobacco products, such as cigarettes, cigars or pipes??	1. Yes 2. No
410	Do you currently smoke tobacco products daily?	1. Yes 2. No → 416
411	How old were you when you first started smoking?	Age _____
412	Have you tried quitting smoking?	1. Yes 2. No
413	Have you ever consumed an alcoholic drink such as beer, wine, spirits, fermented cider or [add other local examples]?	1. Yes 2. No
414	How old were you the very first time you ever drank an alcoholic beverage?	Age _____
415	Do you currently drink alcohol?	1. Yes 2. No
416	How often do you have a drink containing alcohol?	1. Daily 2. 5-6 days per week 3. 1-4 days per week 4. 1-3 days per month 5. Less than once a month
417	Do you have any problems related to drinking alcohols?	1. Yes 2. No

418	Why don't you chew khat? (circle all possible answers)	<ol style="list-style-type: none"> 1. Because it is not acceptable in my family 2. Because I am concerned about my health. 3. Because it is against social tradition. 4. Because I cannot afford it. 5. Because it is against my religious teaching
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	419	Why don't you smoke tobacco? (circle all possible answers)	<ol style="list-style-type: none"> 1. Because it is not acceptable in my family 2. Because I am concerned about my health. 3. Because it is against social tradition. 4. Because I cannot afford it. 5. Because it is against my religious teaching
	420	Why don't you drink alcohol? (circle all possible answers)	<ol style="list-style-type: none"> 1. Because it is not acceptable in my family 2. Because I am concerned about my health. 3. Because it is against social tradition. 4. Because I cannot afford it. 5. Because it is against my religious teaching

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