2021

PREVALENCE OF FOOD TABOO AND ASSOCIATED FACTORS AMONG PREGNANT WOMEN ATTAINDING ANTINATAL CLINICS AT PUBLIC HEALTH FACILITY IN BAHIR DAR CITY, NORTH WEST ETHIOPIA

MESERET, ABERE

BAHIR DAR UNIVERSITY

BAHIR DAR INSTITUTE OF TECHNOLOGY

SCHOOL OF RESEARCH AND POSTGRADUATE STUDENTS

FACULTY OF CHEMICAL AND FOOD ENGINEERING

MSc thesis on; APPLIED HUMAN NUTRITION

PREVALENCE OF FOOD TABOO AND ASSOCIATED FACTORS AMONG PREGNANT WOMEN ATTAINDING ANTINATAL CLINICS AT PUBLIC HEALTH FACILITY IN BAHIR DAR CITY, NORTH WEST ETHIOPIA

BY

MESERET ABERE

Date 2021

BAHIR DAR, ETHIOPIA

BAHIR DAR UNIVERSITY INSTITUTE OF TECHNOLOGY FACULTY OF CHEMICAL AND FOOD ENGINEERING

Thesis title PREVALENCE OF FOOD TABOO AND ASSOCIATED FACTORS AMONG PREGNANT WOMEN ATTAINDING ANTINATAL CLINICS AT PUBLIC HEALTH FACILITY IN BAHIR DAR CITY,NORTH WEST ETHIOPIA

BY

MESERET ABERE

a thesis submitted in partial Fulfillment of the Requirements for the Degree of

Master of Science in Applied human nutrition

Advisor: - Abebaw Gedef(MSC)

Date 2021

Bahir Dar ,Ethiopia

Declaration of Authorship

I hereby declare that the study on prevalence of food taboo and associated factors among women attending antenatal clinic at public health facility in Bahir dar City is wholly the original work of Meseret Abere. I have carried out the study independently with the guidance and support of my research advisor. Anywhere assistances of other peoples are involved, every effort is made to indicate their contributions have been clearly acknowledged. The study has not been submitted for award of any Degree in this university or any other Institutions.

Declared by:

Name: Meseret Abere

Signature:_____

29/6/2021

Author	Signature	Date
Meseret Abere	_____	29/6/2021

Advisor	Signature	Date
Abebaw Gedef	_____	29/6/2021

APPROVAL SHEET

BAHIR DAR UNIVERSITY

BAHIR DAR INSTITUTE OF TECHNOLOGY

SCHOOL OF GRADUATE STUDIES

FACULTY OF CHEMICAL AND FOOD ENGINEERING

Approval of thesis for defense result

I hereby confirm that the changes required by the examiners have been carried out and incorporated in the final thesis. Name of Student: Meseret Abere Signature Date As members of the board of examiners, we examined this thesis entitled "Prevalence Of Food Taboo And Associated Factors Among Women Attending Antenatal Clinic At Public Health Facility In Bahir Dar City". We hereby certify that the thesis is accepted for fulfilling the requirements for the award of the degree of Masters of Science in "Applied Human Nutrition".

Board of Examiners

Name of Advisor	Signature	Date
Abebaw Gedef (Assi. Prof)		16-02-2023
Name of External examiner	Signature	Date
D/r Oumer Seid		Feb. 16, 2023
Name of Internal Examiner	Signature	Date
D/r Fentanesh Nibret (PhD)		17/02/2023
Name of Chairperson	Signature	Date
M.r Degnet Teferi (Assi. Prof)		16 02 2023
Name of Chair Holder	Signature	Date
M.r Mengistu Gizaw		16-02-2023
Name of Faculty Dean	Signature	Date
D/r Metadel Kassahun (PhD)		16-02-2023

Name &Address of investigator	Meseret Abere Gedfe Tel: +251 9180054 E-mail: - -aberemesi@gmail.com
Name & Address of Advisors	**1. Abebaw Gedef** Tel: +2519--12934463 E-mail: - **abebaw2516@gmail com**
Full title of research project	-**PREVALENCE OF FOOD TABOO AND ASSOCIATED FACTORS AMONG PREGNANT WOMEN IN BAHIR DAR CITY ADMINISTRATION**
Study period	2021
Study area	Bahir Dar

Acknowledgment

Firstly, I would like to forward my acknowledgement towards Bahir dar university faclity of chemical and food engrnering department of applied human nutration Bahir dar unversity for providing the opportunity to do this research paper.

Secondly, I would like to express my deepest gratitude and appreciation to my advisors Mr Abebaw Gedfe(MSC, Assistant professor in Bio-statistics) for his support and valuable comment.

Lastly, I am so happy to extend my appreciation to pregnant women, Bahir dar city town health office and the data collectors for giving their necessary information and collected the data.

Table of Contents

List of Table

Abstract:

Background: Food taboo is any consideration of food items by the society as improper or unacceptable that arises mainly based on religious, cultural, historical and social principles. Developing countries are burdened with the 'triple burden of malnutrition' encompasses the three dimensions of under nutrition (wasting, stunting & underweight), micronutrient deficiencies and over nutrition. Food taboos have great effect on pregnant women through prohibited essential food and/or drinks. It is transferred from generation to generation and has negative effect on pregnant mothers' health. Due to lack of a single study conducted in food taboos practice among pregnant women at Bahir Dar City. This was the reason for the researcher which initiates her to conduct a research on the issue to fill the gap.

Objective: This study aimed to assess the prevalence of food taboo practice and associated factors among pregnant women attending antenatal care at public health facilities in Bahir Dar city 2020.

Methods: Institutional based cross-sectional study design was conducted among 421 pregnant women who were attending antenatal care clinics. Participants were selected using stratified sampling technique and interviewer administrative questionnaire was used for data collection. The data was entered into epi-info software version 7.1 and exported SPSS version.23 for analysis. Multiple logistic regression analysis was conducted to identify predictors of food taboo.

Results: The prevalence of food taboo practice among pregnant women at Bahir Dar city was 27.5%. Avoided food items during pregnancy were meat, honey, milk, fruit and cereals. Reasons mentioned for avoidance of this food items were plastered on the fetal head, and making fatty baby which is difficult for deliver. Age of the mother is 20-30 years (AOR=8.39, 95% CI: 3.49-20.14). More than 30 years [AOR=10.56, 95% CI: (2.00, 51.74)], more than 2 parity [AOR=9.83 95% CI: (2.79, 34.70)], no previous experience of ANC visit [AOR=2.68, 95% CI: (1.26, 5.73)], and no information about nutrition during pregnancy [AOR=4.55, 95% CI: (1.77, 11.70)] were significantly associated with practice of food taboo during pregnancy.

Conclusion: The result of this study revealed that high proportion of food taboo exists during pregnancy in the study area. This could be improved by strengthening the nutrition counseling components of antenatal care follow-up.

Recommendation: Bahir Dar city health zone should mobilize governmental and non-governmental organizations for concerted efforts to design and implement strategic health communication intended to reorient misconceptions and myths for the pregnant women regarding the food taboo.

Keyword: Antenatal care, food taboo, associated, pregnant woman, Bahir Dar, Ethiopia.

Acronyms/Abbreviations'

ANC ----------Antenatal Care

DDS---------- Diversity Diversification Score

LBW---------- Low Birth weight

1. Introduction

Food is a vital component of life. Nutritional practices play an important role in maintaining the health status of an individual (1). Pregnancy and lactation is important phase in women's life. Maternal nutrition has a huge impact on health of the mother and the fetus. Pregnancy imposes the need for considerable extra calorie and nutrient requirements. A balanced and adequate diet is therefore, of utmost importance during pregnancy to meet the increased needs of the mother, and to prevent "nutritional stress". A food taboo is a prohibition against consuming certain foods. The word "taboo" (also spelled "tabu") is Polynesian and means 'sacred' or 'forbidden'; it has a quasi-magical or religious overtone(2). Taboos represent "unwritten social rules that regulate human behavior (3). Some foods may be prohibited during certain religious periods (*e.g.*, Lent), at certain stages of life (*e.g.*, pregnancy), or to certain classes of people (*e.g.*, priests), even though the food is otherwise permitted. (4). Food taboos are known from virtually all human societies. Most religions declare certain food items fit and others unfit for human consumption. Dietary rules and regulations may govern particular phases of the human life cycle and may be associated with special events such as menstrual period, pregnancy, childbirth, lactation, and in traditional societies – preparation for the hunt, battle, wedding, funeral, etc.(5). Religion has a powerful influence on food habits of the people (6)

Food taboo is any consideration of food items by the society as improper or unacceptable that arises mainly based on religious, cultural, historical and social principles(7). The consequence of not adhering to an established food taboo is always defined by the society as it causes illness or death, which is similar across different communities of the world. It either may govern the completely human life cycle or may be associated with special events such as pregnancy, childbirth, and lactation. Evidence shows that food taboo accounts largely to maternal and fetal malnutrition during pregnancy (1, 2).

Food taboo can also be defined as abstaining people from food and/or beverage consuming due to religious and cultural reasons and it can be permanent or temporal.

Permanent food taboos are avoiding food and/or drinks throughout their life, while some foods are avoided for certain periods of time. These restrictions often apply to women and are related to the reproduction cycle (during pregnancy, birth, and lactation periods (3).

Food taboos have influence on pregnancy even though they need about 300 extra calories per day, especially during the later pregnancy period. When a baby grows quickly, additional calories should come from nutritious foods, so they can contribute to baby's growth and development (4).

The major problem of food taboos is preventing pregnant women from accessing a well-balanced diet, resulting in high prevalence of low birth weight and harm to mother and baby (5).

During pregnancy a woman needs good nutritional status for a healthy outcome. Women who have a poor nutritional status at conception are at higher risk of disease and death; their health depends greatly on the availability of food, and they may be unable to cope with their increased nutrient needs during pregnancy in situations of food insecurity (6). Infections such as malaria, HIV and infestation with gastro intestinal parasites can exacerbate such women's under nutrition(6).

During pregnancy all women need more food, a varied diet, and micronutrient supplements. When energy and other nutrient intake do not increase, the body's own reserves are used, leaving a pregnant woman weakened. Energy needs increase in the second and particularly the third trimester of pregnancy. Inadequate weight gain during pregnancy often results in low birth weight, which increases an infant's risk of dying (7).

1.2. Statement of the problem

Studies showed that nutrition during pregnancy was the single most important factor predicting maternal anemia, preterm birth, intrauterine growth restriction and reproductive loss through still births (10).

Food taboos during pregnancy are influenced by different factors like dietary counseling, whether attending antenatal care (ANC) clinic or not, younger age, less educational status, and multiparous and pregnant women. Culture and belief also influence maternal eating pattern during pregnancy(11).

Nevertheless, when misconceptions or food taboos exist, the pregnant woman's ability to meet such increased demands can even be more compromised, hence putting the woman at a greater risk of adverse pregnancy outcomes (18).

Food taboos leads to the low nutritional status among most women and put them at high risk of maternal death. Low body weight, iron deficiency and anemia are one of the main causes of death in case of hemorrhage during labor. Maternal malnutrition has been strongly linked to functional consequences like increased risk of adverse pregnancy outcomes, poor infant survival and risk of chronic diseases at later stages of life(19). Studies showed that nutrition during pregnancy was the single most important factor predicting maternal anemia, preterm birth, intrauterine growth restriction and reproductive loss through still births (19).

To what extent such food taboos, associated factors, and misconceptions exist and how they affect pregnancy outcomes in Ethiopia remain low. This is unfortunate, since such information could be considered in the design of nutrition interventions targeting among pregnant women. Besides, studies that involve a number of factors that can influence food consumption like health workers, the elderly, and agricultural extension workers, as well as husbands of pregnant women are rare, if not existent(20).

Based on the above assumptions and attempt to fill this gap in the literature and due to lack of a single study conducted in food taboos practice among pregnant women at Bahir Dar city. This was also the reason for the researcher which initiates her to conduct a research on the issue to fill the gap. Therefore, the purpose of this study was to assess the prevalence of food taboo practice and associated factors among pregnant women attending antenatal clinics at public health facility in Bahir Dar city

So this study will provide relevant information about food taboos practice among pregnant women at Bahir Dar city.

1.3 Significance of the study

The study is important for ministry of health, Amhara health bureau, the Bahir Dar s city and other governmental and nongovernmental organizations working on promotion of maternal health to implement programs aimed at improving dietary diversity among pregnant women. The study is also used for researchers and planners for the secondary source of data. The study has contributed to gain knowledge about dietary diversity and associated factors to individuals.

2. Literature review

2.1 Magnitude of food taboo

Maternal nutrition is the product of a number of complex factors, including adherence to food „taboos" and a patriarchal gender order that limits women"s mobility and decision-making. Culture has a strong impact on the food behavior of people. The food, habits and practices are closely related to the typical behavior of a particular group of people or culture. Such behavior follows codes of conduct in relation to food choice, methods of food preparation and eating, number of meals eaten per day, time of eating, and the size of the portion eaten. In various studies it was seen that pregnant women in various parts of the world are forced to abstain from nutritious foods as a part of their traditional food habits.(1).Irrespective of whether from urban or rural area people have their own beliefs and practices.(2).

The roots of these kinds of customs and taboos are rational at times and some real origins cannot be traced.(9). Malnutrition is one of the most important risk factors for poor health, both directly and in directly. In Asia, young women of reproductive age are considered to be among the most vulnerable to malnourishment. While the issue of malnourished women is problematic all the time, it is particularly so when pregnancy occurs. India continues to struggle with levels of maternal malnutrition that are among the highest in the world. Not only is there a negative impact on children born to malnourished mothers, but there is also an increased risk of maternal morbidity and mortality. Malnutrition during pregnancy and its consequences maximally affect the health and long-term outcomes of the population (3)

Food taboos and cultural beliefs influence food choice and dietary preferences among pregnant women in the Eastern Cape, South Africa. Overall, 37% of the women reported one or more food practices shaped by local cultural taboos or beliefs. Some pregnant women consumed herbal decoctions for strengthening pregnancy, facilitating labor and overall health of both themselves and the fetus(4).

Another study on taboos and misconceptions associated with pregnancy among rural women of Surendranagar district shows that about 77.0% women had some kind of

taboos/ misconceptions associated with pregnancy. Most common taboos/misconceptions seen were avoidance of some food/fruit during pregnancy (48.1%). About 31.7% said consumption of saffron results in fair skin of the child and 20.2% women had multiple other misconceptions. Reasons given for not consuming these foods were many. About 52.1% said abortion as a reason, 26.0% said it causes placental disruption and 21.9% gave multiple answers like hot food, cold food, seizures, difficult labor(5).

Food taboos and myths in South Eastern Nigeria shows that 37 % of respondents avoided some foods in pregnancy due to food taboos and no relationship was seen between this avoidance of food and maternal educational attainment, parity (number of obstetrics deliveries) and occupation. (6).

A study in Sudan indicates that 43.8% of the pregnant women refused to eat some types of food during pregnancy, 65.5% avoided eating red meat, 29% avoided eating eggs, 23.4% avoided eating white meat and 36.5% avoided drinking milk. 64.1% of the pregnant women refrained to eat some types of food during pregnancy for personal reasons as 46.2% due to morning sickness, 67.3% avoided eating certain foods during pregnancy because they cause difficulties during labor, 15.4% believe that it may cause disease to the pregnant women(7).

In Africa, majority of pregnant mothers (59.9%) had a poor dietary practice during pregnancy. They lacked the basic and the essential practice to consume vegetables, fruits, egg and others which are the basic sources of most of the types of vitamins and minerals. Moreover, unhealthy food practice was observed among them (9) and majority (75.2 %) of pregnant women did not take additional meal during pregnancy; about 69.3 % of the pregnant women were skipping one or more of their regular meals(9).

Another study in food taboo among pregnant Ethiopian women: shows that almost a fifth of the study participants (18.2%) avoided one or more food items. The food items most avoided were green chili pepper, organ meat, and dark green leafy vegetables like spinach, lettuce, kale, and broccoli. The underlying reasons were largely traditionally held beliefs and misconceptions(10).

2.2 Factors associated with food taboo

A study done on pregnant women in Ethiopia indicates that almost half (49.8 %) avoided at least one type of food due to food taboos. Linseed, Honey and Milk/ yoghurt were commonly avoided food items. Belief for food restriction were Plastered on the fetal head, makes fatty baby and difficult delivery, fear of abortion, evil eye, fetal abnormality. More than three forth (82.4%) believe on importance of eating balanced diet during pregnancy. But only 33.2% made changes to their normal eating habit. More than one third (38.3%) of pregnant women practice fasting during pregnancy, educational status showed a significant association with belief of balanced die (10)**.**

In the study conducted at determinants of food taboos in the pregnant women of the Awabel district, east Gojjam zone, Amhara regional state in Ethiopia twenty-seven percent of pregnant mother encountered food taboos. Age of the mother, income, and previous antenatal care were significantly associated with food taboo(10).

Across-sectional study about dietary practices and associated factors among pregnant women in Wondo Genet district, Southern Ethiopia indicates that about 43.8% of study participants commonly skipped lunch and 24.2% skipped breakfast. About 21% of the pregnant mothers restricted their food intake. Majority (75.2 %) of study participants did not take any additional meal during pregnancy (20). Factors like not growing enset, eating no legumes and no additional meal have a significant association with food restriction habit of the respondents. Taking no additional meal was significantly associated with family size, growing khat, not growing vegetables and fruits, and no consumption of white vegetables and roots. Skipping meal was significantly associated with family size and number of pregnancy(19).

Another study conducted in northwestern Ethiopia shows that husband income, ownership of radio, history of illness and dietary knowledge revealed significant association with dietary practices. Study participants whose husbands earn 1000–2000 ETB were more likely to have good dietary practice, whereas study participants who own radio were more likely to have good dietary practices. Women who didn't experience illness were more likely to have good dietary practices. The study participants who have

good dietary knowledge were times more likely to have good dietary practice than their counterparts(20).

In the study conducted in Mekelle around 12% of the pregnant women avoided at least one type of food during their current pregnancy for one or more reasons. These mothers avoided eating items such as yogurt, banana, legumes, honey, and “kollo” (roasted barley and wheat). The most common reasons given for the avoidances were that the foods were (mistakenly) believed to cause: abortion; abdominal cramps in the mother and newborn; prolonged labor; or coating of the fetus’s body. Maternal education and marital status (single) were found to be negatively associated (protective factors) with observances of pregnancy food taboos (22)

2. 3. Conceptual framework

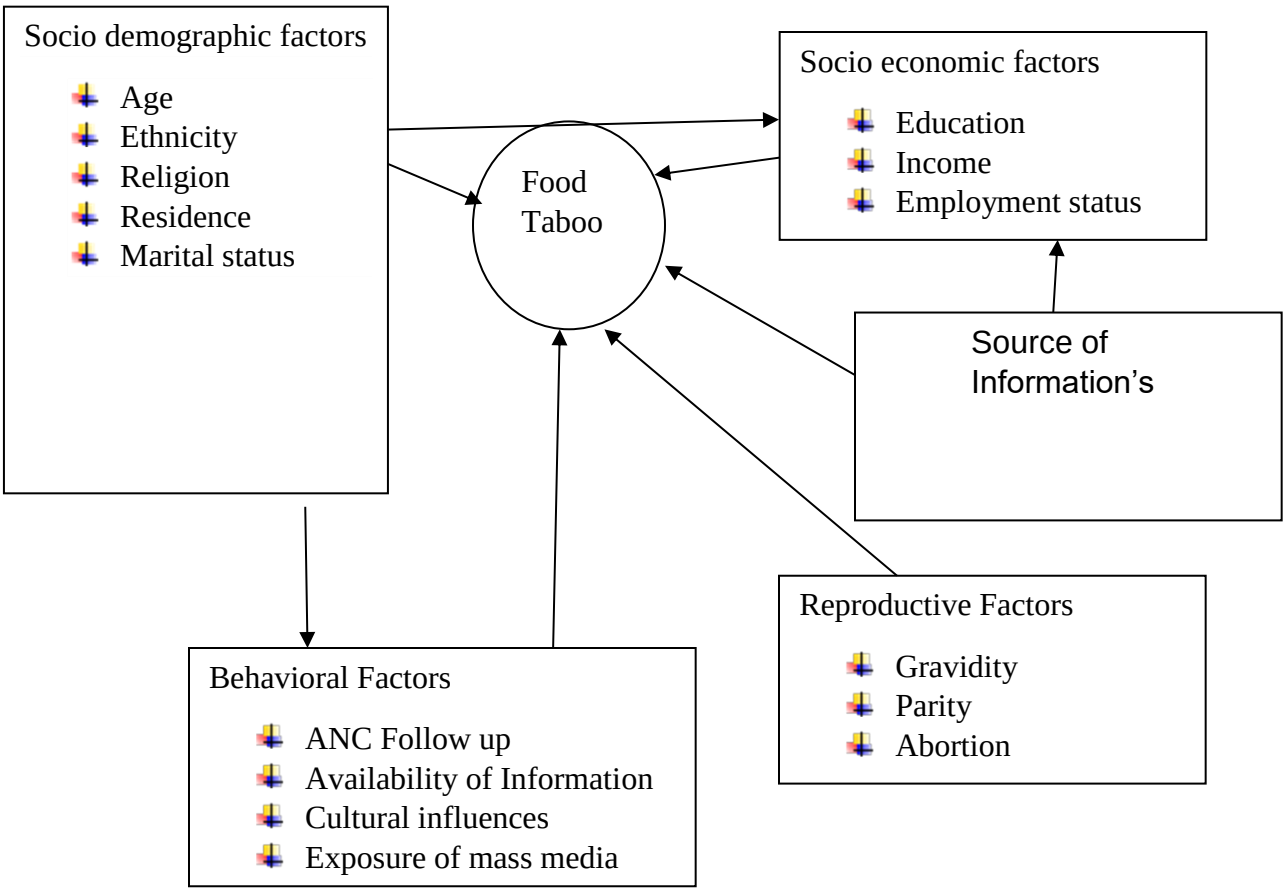


Figure 1:- Conceptual framework of the study

3. Objectives

3.1. General objective

To assess the prevalence of food taboo practice and associated factors among pregnant women attending antenatal clinics at public health facility in Bahir Dar city, Northwest Ethiopia, 2020

3.2. Specific objectives

- To determine the prevalence of food taboo practice among pregnant women at Bahir Dar city
- To identify factors associated with food taboo among women at Bahir Dar city

4. Methods

4.1 Study area and period

The study was conducted in Bahir Dar city at public health facilities from October 20/ to November 20/ 2020. Bahir Dar is the capital city of Amhara region in North West Ethiopia, located 565 km away from Addis Ababa, the capital city of Ethiopia. The city is situated with an elevation of 1,800 meters (5,900 ft.). The average temperature and humidity of Bahir Dar city is 26°C and 31% respectively and the direction of wind is NW at 10 km. According to the report of Bahir Dar city municipality, the total population of Bahir Dar city in 2013 is 445,084. Of this population, 222,097 (49.9%) are males and 222,987(50.1%) are also females (13).

There are three public hospitals, (Addis Alem Primary hospital, Felege Hiowt specialized and comprehensive hospital, Tebebe Ghion teaching Hospital) and 10 health centers (Bahir Dar health center, Abay Mado health center, Shumabo health center, Dagimawi Minilik health center, Tiss Abbey health center, Shimpt health center, Zenzelema health center and Meshentie health center), all are providing antenatal care service for community.

4.2. Study design

Facility based cross-sectional study design was conducted.

4.3. Population

4.3.1. Source of population

All pregnant women who attending antenatal clinics at public health facilities

4.3.2. Study population

All pregnant women who attending antenatal care clinics at the selected public health facilities during the data collection period at Bahir Dar

4.4. Inclusion and exclusion criteria

4.4.1. Inclusion criteria: Women who attending their antenatal care service in the selected facilities at Bahir Dar

4.4.2. Exclusion criteria: Pregnant women attending ANC in the study facilities but currently live out of Bahir Dar city

4.5. Sample size and sampling technique

4.5.1 Sample size determination

Objective 1

The minimum sample size (proportion of women's having practice of food taboo) was calculating using single population proportion formula based on the following assumption: confidence level 95% ((Z=1.96), proportion food taboo among pregnant women attending in Wondo Genet town was 49.8%(17) and margin of error 5%

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

Where: n= the minimum sample size required for the study

Z= standard normal distribution (Z=1.96) with 95% confidence interval

P= proportion of food taboo (49.8%)

D= is a margin of error (d=5%)

$$n = \frac{(1.96)^{2*}0.498 * 0.502}{(0.05)^2} = 383$$

Adding of 10% non-response rate, the final minimum sample size will be 421.

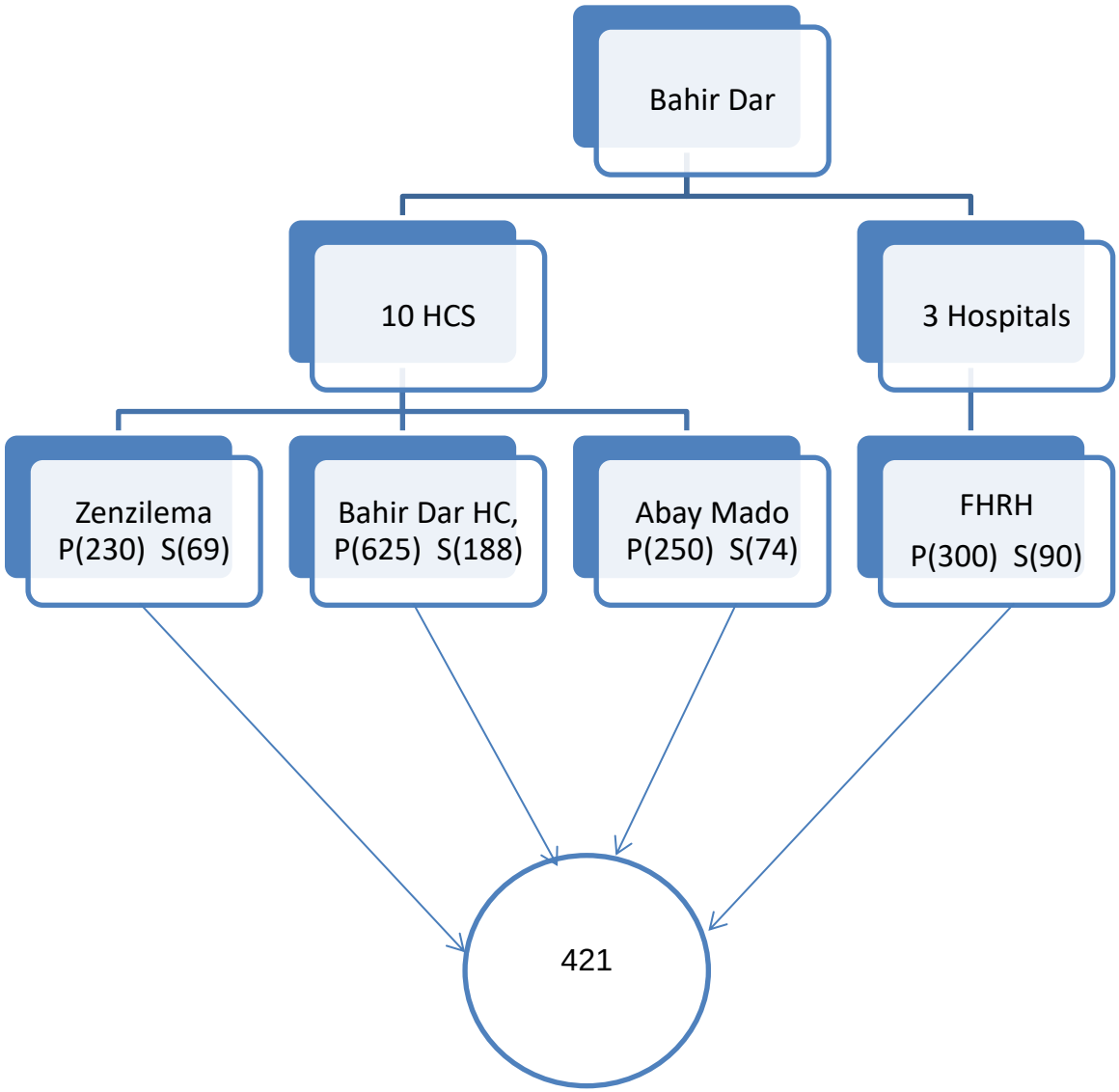
Objective 2: **-**Factors associated with food taboo. In this case, the sample size was calculated by using EPI Info version 7 software program by using different variables from different studies (17,24) (considering power; 80%, 95% CI, ratio (unexposed: exposed), outcome in unexposed group, odds ratio and outcome in exposed group (Table 1).

Table 1:- Sample size calculation for factors of food taboo practice

Determinants	CI	OR	Power	Ratio (unexposed/exposed)	Outcome in	Outcome in	sample size
					Unexposed Group	Exposed Group	
Educational status(29)	95	4.2	80	1/1	34	68.9	74
Age(29)	95	2.97	80	1/1	25	34.8	32
Income((30)	95	0.28	80	1/1	66.7	82.8	94
Previous ANC(31)	95	2.33	80	1/1	25.2	40.3	221
Total							421

4.5.2. Sampling technique and procedure

Stratified sampling technique was employed to select health centers in the study area. Then all pregnant women who visit the health facilities were recorded as a sampling frame in the selected health centers. Of the total 10 health centers and 3 hospitals, firstly, we stratified in two strata like health center and hospitals. The information obtained from Bahir Dar City health office there were 3168 ANC visitors in September 2020. Due to large size of the populations then we selected three health centers (Bahir Dar, Abay Mado and zenzelema health centers) and one hospital (Felege Hiwot specialized comprehensive hospital (FHSCH)) using a simple random sampling method. Secondly, we were selected respondents at the selected health center and hospitals. The calculated sample size is then, proportionally allocated to each health facility. Study participants selected using a systematic sampling technique (the first pregnant women arrived for a ANC visit taken for interview then within the 3rd interval collected the information). The first woman who gets there first was the first interviewee for each day and facility.



Note: P =population, S = sample size, HCS = health center , FHRH= Felegehiwot Referral hospital

Figure 2: schematic presentation of participants

4.6. Variable of the study

4.6.1. Dependent variable

Practice of food taboo (Yes, No)

4.6.2. Independent variable

Socio demographic factors: -Maternal age, family size, educational status, income occupation, ethnicity, religion, marital status, residence.

Reproductive characteristics: Parity and gravidity

Need factors: -Means of awareness of pregnancy, perception on timely booking of ANC, advice from significant others, type of pregnancy/wanted or unwanted.

4.7. Operational definition

Time of ANC attendance: The first time by which pregnant mothers come to antenatal clinic to get care from health professionals
Timely ANC initiation: The first ANC visit before 16 weeks of gestational age
Late ANC initiation: first ANC visit start at or after 16 weeks of gestational age
Food taboo: -at least one food items averted during pregnancy

4.8. Data collection tools and methods

Structured and pretested interviewer -administered questionnaire was used to collect the data from pregnant women who attending antenatal clinics. The questioner was developed in English then translated in to local language Amharic. Pre-test was done on 5 % of the calculated sample size prior to actual data collection at Merawi primary hospital. Six trained nurse or midwives and two BSc midwives were recruited as data collectors and supervisors for data collection process respectively.

4.9. Data quality assurance

Quality of data was assured by using properly designed questionnaire and other literature developed for similar purpose. The questionnaire was pre-tested on 5% of sample size prior to actual data collection out of the study area. One day training was given for data

collectors and supervisors on the rationale of the study, data collection technique and how-to taking consent from respondents. Each questionnaire was reviewed daily by the supervisors and the principal investigator to check the completeness and clarity of the questionnaire immediately after received from the participants in the field.

4.10. Data management and analysis

The collected data were entered into epi-info version 7, and then exported to SPSS version 23 for cleaning and analysis. Descriptive statistics was computed and presented using frequency, proportion, graph and tables. The outcome variable practice of food taboo was code as yes and no. To see the association between independent and outcome variable binary logistic regression model was used. All explanatory variables with $p<0.20$ on simple binary logistic regression analysis was entered into multiple binary logistic regression analysis and significant association were declared based on $p<0.05$ and odds ratio with 95% CI.

4.11. Ethical consideration

Ethical clearance was obtained from Bahir Dar University, Ethiopia. Then legal official clearances letters was obtained from the Amhara public health institute (APHI). Finally, a legal official letter was received from Bahir Dar zonal health department and each health facilities. Verbal consent also was obtained from each study participants. The purpose of study, the right refuses, or partial refuse was told to each participant. Confidentiality secured by avoiding writing the patient's name and the data will not give for third person.

CHAPTER FIVE

5. Result

5.1 Socio-demographic characteristics of the participants

In this study; a total of 421 pregnant women were participated. Out of the total respondents, 25(5.9%) were less than 20, the majority 262(62.2%) were in the age group of 21- 29 years. The educational status of the participant were 181(43%) of the respondents were tertiary level and above followed by secondary education 122(29%). Moreover, regarding to their husband education 206(48.9%) of the respondents were tertiary level and above, 134(31.8%) had secondary education.

Most of the respondents, 329(88 %) were followers of Orthodox Christianity followed by Muslim who accounts 45(12%). With regard to their ethnicity, about 390(96.2%) were Amhara, 18(4.3%) were Oromo and 13(3%) were Guragie. The highest portions of the respondent's occupations were house wife 132(31.4%) followed by civil servant 111(26.4%). Pertaining to the income distribution of respondents; 55(18.8%) had income less than birr 2000, 65(22.2%), had income between birr 2000 -3500, 62(21.2%) had income between birr 3501-5000 and 111 (37.9%) had income greater than 5000. (Table 1).

Table 2: Socio Demographic characteristics of pregnant women in Bahir dar city, Ethiopia 2020 (n = 421)

Socio Demographic Characteristics		No	%
Educational Status	Illiterate	64	15.2
	Read and Write	54	12.8
	Secondary	122	29
	Tertiary	181	43
Educational status of husband	Illiterate	36	8.6
	Read and Write	45	10.7
	Secondary	134	31.8
	Tertiary	206	48.9
Resident	Rural	73	17.3
	Urban	348	82.7
Marital Status	Married	405	96.2
	Divorced	16	3.8
Religion	Orthodox	329	78.1
	Muslim	70	16.6
	Protestant	22	5.2
Ethnicity	Amhara	390	92.6
	Oromo	18	4.3
	Guragie	13	3.1
Occupation	Unemployed	57	13.5
	Student	21	5
	House Wife	132	31.4
	Daily Laborer	25	5.9
	Business Man	45	10.7
	Civil Servant	111	26.4
	Private work	8	1.9
	Others	22	5.2
Age Group	≤ 20	25	5.9
	21-29	262	62.2
	≥30	134	31.8
Family size group	≤ 3	227	54.4
	>3	190	45.6
Income Group	≤ 2000	55	18.8
	2000 - 3500	65	22.2
	3501 -5000	62	21.2
	>5000	111	37.9

5.2. Reproductive and nutrition characteristics

Number of pregnancies so far (gravidity), the majority, 160(38%) of the respondents gravidity for two times, 107(25.4%) of the respondents gravidity for one time, 96(22.8%) of the respondents gravidity for three times, 48(11.4%) of the respondents gravidity for four and above times. Moreover, regarding to status of parity, 155(37.2%) of the respondents parity for one time, 93(22.3%) of the respondents parity for two times, 36(8.6%) of the respondents parity for three times, and 133(31.9%) of the respondents had no experienced of parity,

In addition to the above, 78(19.8%) of the respondents are experienced abortion. Among pregnant women 232(80%) of the pregnant women visited ANC previously. out of 232 respondents 128(67%) were visited four times and above and 51(26.6%) visited for two times, The majority 121(52.2%) of the women started ANC at 1^{st} trimester, 98(42.2%) of the women started ANC at 2^{nd} trimester, and 357(85.8%) of the women having nutrition information about the importance of dietary diversity during pregnancy.

More than half (58.4%) of pregnant women practice fasting during pregnancy, type of fasting includes restriction of meat and milk containing food items in orthodox religion and Abstain from eating at day time in Muslim women (Table 3).

Table 3: Reproductive and nutrition characteristics of pregnant women in Bahir dar city, Ethiopia 2020 (n=421)

Variables		No	%
Gravidity	0	10	2.4
	1	107	25.4
	2	160	38
	3	96	22.8
	≥4	48	111.4
Parity	0	133	31.9
	1	155	37.2
	2	93	22.3
	3	36	8.6
Abort	Yes	78	19.8
	No	315	80.2
ANC visited in the previous pregnancy	Yes	232	80
	No	58	20
Number of ANC Visited base on trimester	1st visit	8	4.2
	2nd visit	5	2.6
	3rd visit	51	26.6
	4th and above	128	67
Time of ANC started	1st Trimester	121	52.2
	2nd Trimester	98	42.2
	3rd Trimester	13	5.6
Do you have an information about dietary diversity is important during pregnancy	Yes	357	85.8
	No	59	14.2
Fasting during pregnancy	Yes	240	58.4
	No	171	41.6

5.3 Prevalence of food taboo during pregnancy

In this study; we found that the prevalence of food taboo among pregnant women was 112 (27.5%). Furthermore, we found that the types of food desisted from by pregnant

women were, 80 (22.5%) avoided eating meat, 76(21.4%) of them avoided eating eggs, 59(16.6%) avoided eating honey, 36(10.1%) avoided drinking milk, 60(16.9%) of them avoided eating fruit, and 44(12.4%) of them avoided eating cereals. Even though those food types are so essential for pregnant women, they practiced abstain from those foods during pregnancy. Out of those who abstain food during pregnancy, they reason out that 48 (21.8%) their delivery were difficult and 58 (26.4%) of their baby were fatty, Obesity, 65(29.5%) were plastered (Table 4).

Table 4: Food taboo of pregnant women in Bahir Dar city, Ethiopia 2020(n=421)

Variables		No	%
Food Avoided during pregnancy(food taboos)	Yes	112	27.5
	No	296	72.5
Milk avoided		36	10.1
Egg avoided		76	21.4
Meat avoided		80	22.5
Honey avoided		59	16.6
Cereal avoided		44	12.4
Fruit avoided		60	16.9
Plastered		65	29.5
Fear of fatty		58	26.4
Delivery problem		48	21.8

5.4 Factors associated with practices of food taboos

We assessed the association between each independent variable with practice of food taboos during pregnancy. The variables such as, age group, family size, educational status, gravidity, parity, ANC visit, information about dietary diversity is important during pregnancy and practices of fasting during pregnancy were associated with the dependent variable but monthly income of pregnant women, status of husband education, abortion, and time of ANC started failed to maintain their association with the dependent variable in the binary logistics regression.

After adjusting for the effect of confounding variables using multiple binary logistics regression analysis, variables like age of pregnant women, parity, ANC visit during last pregnancy, and information about dietary diversity during pregnancy were statistically

significant association with the practices of food taboo while the rest variables were not statistically significant at p-value<0.05.

In the multivariate logistics regression analysis as the age of the woman is increased, adoption of the food taboo is increased. Pregnant women whose age is 20-30 years were 8.39times more likely to develop food taboos compared with the age less than 20 years (AOR=8.39, 95% CI: 3.49-20.14).And also pregnant women whose age were more than 30 years had 10.56 times more likely practices of food taboos as compared to those age group less than20 years [AOR=10.56, 95% CI: (2.00, 51.74)]. Pregnant women those who had more than 2 parity were 9.83 times more likely practices of food taboos as compared to than those who hadles than 2 parity [AOR=9.83 95% CI: (2.79, 34.70)].

Moreover, the pregnant women who had no previous experience of ANC visit were 2.68 times more likely developed food taboos as compared to those who had ANC visit during last pregnancy [AOR=2.68, 95% CI: (1.26, 5.73)]. Pregnant women who had no information about nutrition during pregnancy were 4.55 times more likely developed food taboos as compared to those who had information about nutrition [AOR=4.55, 95% CI: (1.77, 11.70)]. (Table 5)

Table 5: Binary and multivariate logistics regression analysis of factors associated with practices of food taboos in Bahir Dar city, Ethiopia, 2021

Variables		Food Taboo Practice							
		Yes	No	COR(95 % C.I)			AOR(95 % C.I)		
Age Group	<20	5	20	1			1		
	20-30	60	192	2.27	0.80	6.43	8.39	3.49	20.14
	>30	47	83	1.81	1.14	2.87	10.16	2.00	51.74
Family size group	1-3	74	143	2.02	1.28	3.17	1.66	0.63	4.40
	>3	38	148	1			1		
Educational Status	Illiterate	25	35	1.94	1.05	3.59	1.20	0.24	2.90
	Read and Write	14	40	0.95	0.47	1.91	0.00	0.00	
	Secondary	27	95	0.77	0.45	1.33	0.45	0.17	1.21
	Tertiary	46	125	1			1		
Gravidity	<=2	83	183	1.75	1.08	2.84	2.65	0.78	8.99
	>2	29	112	1			1		
Party	<=2	98	273	1			1		
	>2	14	18	2.17	1.04	4.52	9.83	2.79	34.70
ANC visit	Yes	56	176	1			1.00		
	No	23	31	2.33	1.26	4.32	2.68	1.26	5.73
Food information	Yes	88	264	1			1		
	No	24	31	2.32	1.29	4.17	4.55	1.77	11.70
Fasting	Yes	48	183	1			1.69	0.87	3.28
	No	64	107	2.28	1.46	3.55			

6. Discussion

This study aimed to assess the practice of food taboo and associated factors among pregnant women attending antenatal clinics at public health facility in Bahir dar City, Northwest Ethiopia, 2020.

The finding of this study found that the prevalence of food taboo was 112(27.5%). This finding is similar to the study conducted in Awabel District in West Gojjam, which was 27% (10). This finding is much lower than a study conducted at Shashemene and Wodogenet, in Ethiopia which was 49.8% and 44.8% respectively (9, 11). And also it is much lower as compare to in North Costal Paradesh, it was 82.1% of participants (19). The possible reason to this difference is may be related with the awareness and knowledge of mothers increase due to time and education level. Another reason may be the difference of culture, religion and socio economic back ground of study participants of the studies area (10). Moreover, the prevalence of food taboos observed in this study is therefore relatively greater than when as compared to prevalence reported elsewhere in Ghana, Accra, Africa.(15).It is thought that the relatively high prevalence of food taboos observed in Ghana is due to cultural influence or and religious impact.

Regarding to the type of food items which was avoided in study area were milk, egg, meat, honey, cereal and fruit. Even though those food types are so essential for pregnant women, out of those who abstain food during pregnancy, they reason out that 48 (21.8%) their delivery were difficult and 58 (26.4%) of their baby were fatty (Obesity), and 65(29.5%) were plastered. This result is consistent with the study conducted in Awable District, East Gojjam (10) and Addis Ababa. Practically 112 women avoided livestock products such as meat and milk. This is one of the serious disadvantages of observing food taboos since the major sources of protein which are essential nutrients needed for the rapidly growing fetus are avoided. The study also showed that these women did not take adequate egg, fruit and cereals. The magnitude of the high intake of egg, fruit, and vegetable in this study was small. Some researchers have suggested that a dietary pattern characterized by high intake of vegetables, plant foods, and vegetable oils decreases the risk of preeclampsia [13].

Furthermore, we assessed the association between the practices of food taboos and the independent variables (age, family size, gravidity, parity, abortion, ANC visit, information about nutrition and practices of fasting).

In this study; we found that age of the mother was significantly associated with the practices of food taboos. As age of the mother is increased, practices of the food taboo also increased. Pregnant women whose age was 20-30 years were 8.39 times more likely to develop food taboos compared with the age less than 20 years (AOR=8.39, 95% CI: 3.49-20.14). And also pregnant women whose age were more than 30 years had 10.56 times as likely to practices food taboos as compared to those age group less than 20 years [AOR=10.56, 95% CI: (2.00, 51.74)]. This finding is consistent with other studies conducted in Awabel, Shashemenie, Ethiopia. Women more than 35 years are more likely to practices food taboos. The possible explanation could be younger women may be more likely to accept modern health services since they are more energetic and more likely to attend formal education. Older women on the other hand, tend to believe on indigenous knowledge of traditional practice thus giving less attention to eat balanced diet (16].

Similarly; pregnant women those who had less than or equal to 2 parity were 9.83 times as likely to practices of food taboos as compared to than those who had more than 2 parity [AOR=9.83., 95% CI: (2.79, 34.70)]. The study conducted in Awabel District, Gojjam, Ethiopia, also there was statistical association between parity and practices of food taboos during pregnancy (21). But this finding is in agreement with studies conducted in South Africa, and Eastern Nigeria, the possible reason to this difference may due to countries cultural and socio-economic difference (19-21).

The finding of this study revealed that previous ANC attendance was significantly associated with practice of food taboo. Pregnant women who had no previous experience of ANC visit were 2.68 times as likely to practice food taboos as compared to those who had ANC visit during last pregnancy [AOR=2.68, 95% CI: (1.26, 5.73)]. This result is in line with the study conducted in Awebel. They found that pregnant women who have never had ANC attendance in the health institution were 2.33 times more likely to develop food taboo as compared with pregnant women who have had ANC attendance. This may be due to the knowledge gained from formal education and experienced health education.

Moreover; pregnant women who had no information about nutrition during pregnancy were 4.55 times more likely to developed food taboos as compared to those who had information about nutrition [AOR=4.55, 95% CI: (1.77, 11.70)]. This result supported by the fact that good knowledge about basic nutrients and adequate well balanced diet usually resulting in positive dietary practices which are important determinants of optimum health pregnant women Shashemen(11), Awabel(10) and rural Central Ethiopia(12),

7. Limitations of the study

- ✓ Design Limitation in establishing the cause and effect relationship
- ✓ Very limited studies for further comparison and discussion
- ✓ Absence of qualitative findings for possible triangulation

8. Conclusion

The findings of this study revealed that the prevalence of food taboo who avoided at least one food items was 27.5% in the study area. Women, who were of old age, had less than 2 parity, had no previous ANC attendance and women who had no information about nutrition during pregnancy were more practicing food taboos.

The food items which were avoided during pregnancy were egg, meat, honey, fruit and cereals. Reasons which avoid food were plastered on the fetal head, fatty baby, and fear of delivery problem. Age of the mother, parity, previous ANC attendance, available of information had significant association with food taboos.

9. Recommendation

Based on the finding, the following recommendations were forwarded:

- ✓ Bahir Dar city health zone should mobilize governmental and non-governmental organizations for concerted efforts to design and implement strategic health communication intended to reorient misconceptions and myths for the pregnant women regarding the food taboo.
- ✓ Health education program had better taken cognizance of the popular beliefs regarding food taboos during pregnancy and used innovative means to minimize their negative and maximize their positive nutritional effects.
- ✓ Encourage further research in Ethiopia to determine proportion of national minimum dietary diversity practice of pregnant women.

References

1. “Harmful traditional practices affecting the health of women and children,” Factsheet No 23, vol. 10, 1997. View at: Google Scholar
2. O. Esther, Relation of dietary and socio economic characteristics of mothers to child growth [Master thesis], 2008.
3. P. Rajkumar and M. A. Vedapriya, “Taboos and misconceptions about food during pregnancy among rural population of pondichery,” Calicut Medical Journal, vol. 8, no. 2, p. 1, 2010. View at: Google Scholar
4. N. BizaZepro, “Food Taboos and Misconceptions Among Pregnant Women of Shashemene District, Ethiopia, 2012,” Science Journal of Public Health, vol. 3, no. 3, p. 410, 2015. View at: Publisher Site | Google Scholar
5. A. Parmar and G. H. Khanpara, “A study on taboos and misconceptions associated with pregnancy among rural women of Surendranagar district,” Healthline, vol. 2, p. 40, 2013. View at: Google Scholar
6. Lakshmi, “Food preference and taboos during ANC among the tribal women,” Journal of community nutrition and health, vol. 2, no. 2, p. 33, 2013. View at: Google Scholar
7. K. A. Samson, “Common food taboos and beliefs during pregnancy in Yilokrobo district, Ghana,” Science Journal of Public Health, vol. 2, no. 3, p. 41, 2014. View at: Google Scholar
8. J. DelmaPaofa, N. Kaugla, T. Catherina et al., “Food taboos and traditional customs among pregnant women in Papua New Guinea: Missed opportunity for education in antenatal clinics,” Research Journal reproductive health, vol. 8, no. 1, p. 6, 2013. View at: Google Scholar
9. 7. World Health Organization,(2012). Nutrition of women in the preconception period, duringpregnancy and the breastfeeding period Report by the Secretariat: sixty-fifth world healthassembly A65/12; Provisional agenda item 13.3.
10. Wollelaw Getnet, Wubie Aycheh, TaddeleTessema, "Determinants of Food Taboos in the Pregnant Women of the Awabel District, East Gojjam Zone, Amhara Regional State in Ethiopia", Advances in Public Health, vol. 2018, Article ID 9198076, 6 pages, 2018. https://doi.org/10.1155/2018/9198076.

11. NejimuBizaZepro. Food Taboos and Misconceptions Among Pregnant Women of Shashemene District, Ethiopia, 2012 Department of Nursing, College of Health Sciences, Samara University, Samara, Afar, Ethiopia
12. Taddese Alemu. Dietary practices of pregnant women and its associations with maternal and perinatal outcomes in rural Central Ethiopia,2016;8:48
13. Central Statistical Agency, Ethiopia Mini Demographic and Health Survey, vol. 56, Addis Ababa, Ethiopia, 2014.
14. J. T. Liu, “Taboos in Food Practices during Pre and Post-natal: A Comparative Study between Tribal and Non- Tribal Women in Odisha,” Journal of reproductive health, vol. 2, no. 3, pp. 141–152, 2015. View at: Publisher Site | Google Scholar
15. O. A. Oni and J. Tukur, “Identifying pregnant women who would adhere to food taboos in a rural community: a community-based study.,” African Journal of Reproductive Health, vol. 16, no. 3, pp. 68–76, 2012. View at: Google Scholar
16. H. B, “Nutritional Status of Pregnant Women in Selected Rural and Urban Area of Bangladesh,” Journal of Nutrition & Food Sciences, vol. 03, no. 04, 2013. View at: Publisher Site | Google Scholar
17. O. S. Oluwafolahan, A. B. Catherine, and A. J. Olubukunola, “Dietary habits of pregnant women in Ogun-East Senatorial Zone, Ogun State, Nigeria: A comparative study,”
18. International Journal of Nutrition and Metabolism, vol. 6, no. 4, pp. 42–49, 2014. View at: Publisher Site | Google Scholar
19. KucheDesalegn, Singh Pragya, MogesDebebe. Dietary practices and associated factorsamong pregnant women in Wondo genet district, southern Ethiopia: A cross-sectional study,2015;4(5):270-275.
20. MekonnenSisay., EndalamawMemgesha. Dietary Practice and Associated Factors amongPregnant Women in Gondar Town North West, Ethiopia, 2014. International Journal ofNutrition and Food Sciences, 2015;4(6),: 707-712
21. Rajkumar Patil, Anuj Mitta, etal Taboos and misconceptions about food during pregnancy among rural population of Pondicherry. Calicut Medical Journal 2010;8(2):

22. Ankita Parmar etal, A study on taboos and misconceptions associated with pregnancy among rural women of Surendranagar district. Nag, Moni.: Beliefs and Practices About Food During Pregnancy. Economic and Political Weekly. Sept 10, 1994.P.2427-2438.
23. Ministry of planning and economic development, Food and nutrition unit, social and cultural aspects of food consumption patterns in Ethiopia, Addis Ababa,1992.
24. Christian Relief and Development Association (1991) Workshop on Nutrition and Family Health, Christian Relief and Development Association, Ethiopia
25. Hadush Z, Birhanu Z, Chaka M, Gebreyesus H. Foods tabooed for pregnant women in Abala district of Afar region, Ethiopia: an inductive qualitative study. BMC Nutrition. 2017;3(1):40.
26. Zerfu TA, Umeta M, Baye K. Dietary habits, food taboos, and perceptions towards weight gain during pregnancy in Arsi, rural Central Ethiopia: a qualitative cross-sectional study. J Health Popul Nutr 2016, 35(1):22–22.
27. World Health Organization. Haemoglobin concentrations for the diagnosis of anaemia and assessment of severity.
28. Simpson JL, Bailey LB, Pietrzik K, Shane B, Holzgreve W. Micronutrients and women of reproductive potential: required dietary intake and consequences of dietary deficiency or excess. Part II--vitamin D, vitamin a, iron, zinc, iodine, essential fatty acids. J Matern Fetal Neonatal Med. 2011;24(1):1–24.
29. Ververs M-T, Antierens A, Sackl A, Staderini N, Captier V. Which anthropometric indicators identify a pregnant woman as acute lymalnourished and predict adverse birth outcomes in the humanitarian context? PLoS currents. 2013:5:

Annex III: Amharic version

Questioners
SECTION I: SOCIO-DEMOGRAPHIC AND ECONOMIC INFORMATION

S.no	**Questions**	**Coding categories**	Skip to
101	How old are you? Maternal age in years **(Probe for best estimate)**	1. _____ Years	
102	What is your level of education?	1. Cannot read &write 2. Can read and write 3. Complete primary and secondary school 4. College diploma & above	
103	**Educational status of husband**	1. Cannot read &write 2. Can read and write 3. Complete primary and secondary school 4. College diploma & above	
104	**Residence**	1. Rural 2. Urban	
105	What is the highest education level you completed?	1. Unable to read & write 2. Able to read & write 3. Grade completed _____	
106	What is your current marital status?	1. Married 2. Divorced 3. Widowed 4. Separated	
107	What is your religion?	1 Orthodox 2 Protestant 3 Catholic 4 Muslim 5 Other (describe)_____	
108	What ethnic or linguistic group do you belong to?	1. Oromo 2. Amhara 3. Gurrage 4. Others 5. (describe) _____	
109	What is your current occupation?	1. Unemployed 2. Student 3. Housewife 4. Daily laborer 5. Merchant 6. Government Employee 7. Private employee	

		8. Other (specify) _____	
110	What is your total monthly family income? (approximately)?	1. _____Eth. Birr 2. No income 3. Don't know 88 4. No response 99	
111	Family size (Total number of family members)	----------	

SECTION II: MATERNAL AND FAMILY CHARACTERISTICS

201	Number of pregnancies so far (gravidity)?	-------	
202	Number of live births so far (parity)	-----	
203	Number of Abortions so far (Abort's)	-----	
204	Did you have Antenatal care visit during your last pregnancy (s)	1. Yes 2. No	
205	Number of ANC visit?		
206	Time of ANC started	1. 1st trimester 2. 2nd trimester 3. 3rd trimester	
207	Do you have an information about dietary diversity? is important during pregnancy	1. Yes 2. No	
208	Do you avoid any food group in the current? Pregnancy?	1. Yes 2. No	
209	Fasting during pregnancy	1. Yes 2. No	
210	Foods aversion during pregnancy	1. Yes 2. No	
211	Food items averted	1. Milk/ yoghurt 2. Egg 3. Fatty Meat 4. Honey 5. Linseed 6. Fruits	
212	Reasons for food taboo	1. Plastered on the fetal head 2. Fear of fatty baby and difficult delivery 3. Others (fear of fetal abnormality, Abortion	
212	Meal frequency per day	------	
213	Do you have an information about dietary diversity? is important during pregnancy	1. Yes 2. 2. No	

ANNEX IV.

የጥናቱመግለጫ

:____________________________ ፡ /

30

3

?

-

/ - -0918005473 - aberemesi@gmail..com

ANNEX V: -□□□□□□□□□□

□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□

□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□:□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□

□□□□□□□□□□□□□□□□□ □□□□□□□□□□□□□□□□□□□□□□□□□□□□□

□□□□□□□□□□□□□□_____ □□_____□□□□□/□□□□□□□□(□18 □□□□□□□□□□)

□□□□□□□□□□□□□□□□□□□□□□□□□□□□_____□□_____

□□□□□□□□□□□□

_____□□□_____□□_____

□.□	□□□□□	□□□□□	□□
101	□□□□□□□□□;	-------- □□□	
102	□□□□□□□□□□□□□□□□;	1. □□□□□□□□□□□□□□ 2. □□□□□□□□□□□□□□□ 3. □□□□□□□□□□□□□□□ 4. □□□□□□□□□□	
103	□□□□□□□□□□□□□□□□□□□□□□	1. □□□□□□□□□□□□□□ 2. □□□□□□□□□□□□□□□ 3. □□□□□□□□□□□□□□□ 4. □□□□□□□□□□	
104	□□□□□□□□□□□	1. □□□ 2. □□□	
105	□□□□□□□□□□□□□□□□□	1. □□□□ 2. □□□□ 3. □□□□□ 4. □□□□□□	
106	□□□□□□□□□□□□□□□	1. □□□□□□ 2. □□□□□□□ 3. □□□□ 4. □□□□ 5. □□--	
107	□□□□□□□□□□□	1. □□□ 2. □□□ 3. □□□ 4. □□---	
108	□□□□□□□□□□	1. □□□□□□ 2. □□□ 3. □□□□□□□ 4. □□□□□□□ 5. □□□	

		6. □□□□□□□□□□ 7. □□□□□ 8. □□----	
109	□□□□□□□□□□□□□□□□□□□□	1. ------ □□ 2. □□□□□□ 3. □□□□□□ 4. □□□□□□□□□□□□□□	
110	□□□□□□□□□□□□□□	-------	

□□□□□□

201	□□□□□□□□□□□□□□□□□□□□□□	-----	
202	□□□□□□□□□□□□□□□□□□□□□□□□	----	
203	□□□□□□□□□□□□□□□□□□□	1. □□ 2. □□□	
204	□ □□□□□□□ 203 □□□□□□□□□□□□□□□□□□□	----------	
205	□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□ □□□□□□	1. □□ 2. □□□	
206	□□□□□□□□□□□□□□□□□□□□□□□□□□□□	-----	
207	□□□□□□□□□□□□□□□□□□□□□□□□	1. □□□□□□□□ 3 □□□□□ 2. □ 3-6 □□□□□□□□□□□□□□ 3. □ 6-9 □□□□□□□□□	
208	□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□ □□□□□□□□□□□□□□□□□	1. □□ 2. □□□	
209	□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□ □□□□□□□□□□□□	1. □□ 2. □□□	
210	□□□□□□□□□□□□□□□□□□	1. □□ 2. □□□	

211	□□□□□□□□□□□□□□□□□□□□□□□□□□	1. □□ 2. □□□	
212	□□□□□□□□□□□□□□□□□□□	1. □□□/ □□□ 2. □□□□□ 3. □□ 4. □□ 5. □□□□ 6. □□□□	
213	□□□□□□□□□□□□□□□□□□□	1. □□□□□□□□□□□□□□□□□□□ 2. □□□□□□□□□□□□□□ 3. □□□□□□□□□□□□□ 4. □□	
214	□□□□□□□□□□□□□□□□□□□□□	------	