
# COLLEGE OF DEVELOPMENT STUDIES

# CENTER FOR FOOD SECURITY STUDIES

## Prevalence and Determinants of Dietary Practice Among Pregnant Women Governmental Health Centers In Addis Ababa

By: Rodas Mesfin

Addis Ababa, Ethiopia

September, 2024

**ADDIS ABABA UNIVERSITY**

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By: Rodas Mesfin

Advisor: Abebe Haile*/PhD/*

A Research Thesis Summited to The Center for Food Security Studies College of Developmental Studies Addis Ababa University, in Fulfillment of the Requirement for The Award of Master Degree in Food Security and development

Addis Ababa, Ethiopia

September, 2024

# DECLARATION

I, **Rodas Mesfin Kebede,** declare to Addis Ababa University School of Graduate Studies that this thesis is a product of my original research work, and has not been submitted to any other university for any academic degree. Materials and information other than my own are dually acknowledged.

Name: Rodas Mesfin

Signature: _____

Date of Submission: _____

## Supervisor Approval

This is to certify that the above declaration made by the candidate is correct to the best of my knowledge as an advisor.

Approved by: Abebe Haile*/PhD/* _____ _____

Thesis Advisor Signature Date

# EXAMINER APPROVE SHEET

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| Name of the Chairperson | Signature | Date |
| Thesis Advisor | Signature | Date |
| Name of the internal Examiner | Signature | Date |
| Name of the external Examiner | Signature | Date |
| Head, CFSS | Signature | Date |

# ACKNOWLEDGEMENT

We would like to express our sincere appreciation to Addis Ababa University for funding this study. Special thanks go to the selected governmental health center, staff, for their enormous support during the data collection period.

Finally, we like to thank all the women who participated in the study, the data collectors, and supervisors.

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# ACRONYMS

| | |
|---|---|
| A.A | Addis Ababa |
| AAU | Addis Ababa University |
| ANC | Anti Natal Care |
| ASF | Animal Source Food |
| CSA | Central Statistical Agency |
| DDS | Dietary Diversity Score |
| EPHI | Ethiopian Public Health Institution |
| FAO | Food and Agricultural Organization |
| GHC | Governmental Health Center |
| HTN | Hypertension |
| IRB | Institutional Research Review Board |
| RAD | Recommended Dietary Allowance |
| WHO | World Food Organization |

# *ABSTRACT*

*Before months of dietary modifications made during and before pregnancy has the most substantial effects on nutritional status and birth results, despite the important influence of nutritional reserves. Numerous studies have been conducted on dietary practices and their determinants among pregnant women; however, there is a gap in evidence among pregnant women. Therefore, this study sought to close this gap by examining dietary practices and associated factors among pregnant women in Addis Abeba, Ethiopia. This community-based cross-sectional study was conducted among 526 pregnant women between December and June 2024. Stratified multi stage sampling technique was used for selecting pregnant women. Structured questionnaires were used for data collection. The data were entered into the Kobo toolbox and exported to SPSS version 25 software for analysis. Bivariable and multivariable logistic regression analyses were used to identify independent predictors of dietary practices. Odds ratios (ORs) with 95% confidence intervals (CIs) were estimated to identify the factors associated with the outcome variables. A p value ≤ 0.2 indicated statistical significance. The prevalence of inadequate dietary practices among the pregnant from the total respondents, 7.86%, 13.06% and 11.38% of them had high dietary diversity, high food variety score and high consumption of animal source food, respectively. The average score of 3.97 ±0.6714, 0.117 ± 0.373 and 3.165 ± 2.824 were Dietary Diversity Score (DDS), Animal Source Foods (ASFs) and Daily Meal frequency, respectively the magnitude of inadequate dietary practices was high, and it was significantly associated with educational, behavioral, and economic status. Nutritional interventions focused on communicating nutritional behavioral changes and strengthening sustainable income-generating strategies are recommended to improve the dietary practices of pregnant women.*



***Keywords:*** *Nutritional Status, Pregnant Woman, Dietary Diversity, Diet Quality*

# CHAPTER ONE: INTRODUCTION

## 1.1. Background of the study

Maintaining a healthy and balanced diet is essential for everyone to ensure the body operates effectively (Daba et al., 2013). Pregnancy is a phase in which the body undergoes many physical and hormonal transformations. Adequate nutrition during this time supports the healthy weight gain of the mother and the growth and development of the fetus (Ota et al., 2015). It also contributes to better birth results and reduces the chances of the child developing conditions like heart disease and obesity in later years (Barasi et al., 2003). Research indicates that insufficient or excessive levels of certain nutrients can lead to malformations or health issues in the fetus, and malnourished mothers face an increased risk of neurological disorders and disabilities (Barasi et al., 2003).

In developing countries, poor dietary practices are often rooted in limited access to nutritious food and a lack of knowledge about the importance of a balanced diet. Pregnant women in these regions primarily consume a plant-based diet that is often deficient in essential macronutrients and micronutrients. Research has shown that dietary diversity practices among pregnant women in low- and middle-income countries vary significantly, ranging from 20% in Pakistan to 70% in India (Gogoi et al., 2013). Similarly, studies in Ethiopia have indicated that optimal nutritional practices among pregnant women range from 19.9% in Gojjam to 40.1% in Gondar (Alemayehu et al., 2015).

While numerous studies have examined dietary practices during pregnancy, a gap remains in understanding the specific factors influencing these practices in Ethiopia. Research suggests that a complex interplay of factors, including food availability, dietary knowledge, cultural beliefs, educational attainment, income, and livestock ownership, contributes to the dietary behaviors of expectant mothers (Demilew et al., 2020; Tesema, et al., 2015). Furthermore, a study by (Kennedy et al., 2010) investigated the relationship between maternal age, food taboos, and meal frequency in determining dietary practices. The study found that children and pregnant women are particularly vulnerable to under nutrition due to factors such as inadequate nutrient intake, poor diet quality, frequent illnesses, short inter-pregnancy intervals, food taboos, and insufficient food preparation (Harris-Fry et al., 2015).

Addressing these issues requires a comprehensive approach that promotes dietary education, improves access to nutritious food, and considers the socio-economic context of pregnant women. This requires multi-sectoral collaboration, involving healthcare providers, nutritionists, community leaders, and policymakers to implement interventions aimed at promoting healthy dietary practices and improving the overall well-being of mothers and their children.

The inadequate health and nutrition of women, along with the lack of proper care during pregnancy and childbirth, not only leads to maternal deaths but also endangers the health and survival of infants and children (Abdella et al., 2010). Malnutrition has the most harmful impact on the unborn child during pregnancy and the first two years of life, and the consequences of this early damage on health, brain development, intelligence, ability to learn, and productivity are mostly irreversible (Shekare et al., 2006).

During pregnancy and lactation, it is important for women to increase their intake of calories, protein, calcium, folic acid, iodine, and iron. Certain pregnant women are at higher risk of experiencing nutritional deficiencies, including adolescents, underweight or obese women, those with chronic nutritional issues, smokers, alcohol or drug users, low-income individuals, and women with chronic illnesses such as diabetes or anemia (Edris et al., 2005).

## 1.2. Statement of the Problem

Bad dietary food practices affect almost every country in the world, both rich and poor, and it can take on many different forms (Larson et al., 2016). Someone is food secure only when they have availability and adequate access at all times to safe, nutritious food that is needed to maintain a healthy and active lifestyle. According to the previous research's health and health care activities are facing a critical issue because Of social, economic, political, implications as they are not properly managed rather, they are getting worst. (José et al., 2016),

Malnutrition is one of the most serious health problems affecting children and their mothers in the world. Currently out of7 billion world population of About2 billion people are suffering from micronutrient malnutrition, Nearly 800 million people suffer from calorie deficiency. Out of 5 billion adults worldwide, nearly 2 billion are overweight or obese, and one in 12 has type 2 diabetes. Out of 667 million children under age 5 worldwide, 159 million are stunted 50 million are wasted and 41 million are overweight20. (Global nutrition report et al., 2016) . In Ethiopia

the problem is huge, according to EDHS 2016 among all under 5 children, 38% are stunted, 10% wasted and 24% overweight ((CSA) Ethiopia and ICF et al 2016). Micronutrient malnutrition is among the leading and commonest health problems globally, accounting for 7% of the global disease burden and comes with a global cost of $180 billion each year. One in three people have at least one form of micronutrient deficiency (FAO et al., 2013).

The most common micronutrient deficiency is Iron deficiency anemia (IDA), alone affects more than 2 billion people globally and contributes to over 100,000 maternal and almost 600,000 perinatal deaths each year (Kassebaum et al., 2014). Contrarily, malnutrition related to micronutrient deficiency is one of the most widespread, yet largely neglected nutritional challenges faced by women living in the developing world (Bain et al., 2013). The most common cause of micronutrient malnutrition in developing countries is the intake of monotonous cereal based diets that are lacking in diversity. Diets in these countries lack fruits, vegetables and animal source foods, Due to this inadequate nutrient intake among pregnant women, iron deficiency anemia and other micronutrient deficiencies have remained prevalent in developing countries (Daniels et al., 2019). In Ethiopia, even if there is limited evidence on the level of iron deficiency, the prevalence of iron deficiency anemia among pregnant women was around 23% (Alemu et al., 2011).

Not following good dietary food practice in pregnant woman has consequences like poor general mental and physical health. Mental symptoms including depression, stress, anxiety and another health issues like gestational diabetes, anemia, pregnancy induced HTN and pre- eclampsia. This not only affects their current health status and that of their new born but also plays an important role for the future.

Dietary food practice in pregnant woman also has negative consequences for the child that has been linked to poor pregnancy out comes this include low birth weight, cleft palate, transposition of the great arteries, Anencephaly and experience developmental delays (Adikari, ,et al 2016) The relation between dietary food practice and maternal weight appears to be a complex one. Research on whether there is a relationship between food insecurity and obesity has produced mixed results. Poverty appears to be a strong underlying force that put people at greater risk of unhealthy food habits. Available evidence suggests that in developed economies, poor people are more likely to be fatter than rich people (Larson, et al., 2016).

The food habits of expectant mothers have a substantial impact on the health of both the mother and the fetus, making them an important demographic category. Many pregnant women still follow inadequate eating practices in spite of current guidelines and suggestions for good nutrition. This discrepancy emphasizes the need to determine the factors underlying these behaviors and raises questions regarding the frequency of poor eating patterns among expectant mothers. Numerous socioeconomic, cultural, and educational factors that may influence eating choices further exacerbate the issue. Dietary deficiencies can result in unfavorable health consequences, including gestational diabetes, preterm birth, and low birth weight. These results can be caused by a variety of factors, including limited access to healthy meals, a lack of nutritional education, and varied cultural ideas about food. Furthermore, little is known about how these factors interact throughout various groups to cause differences in eating behaviors. Creating focused treatments to enhance pregnant women's eating habits is difficult due to the dearth of thorough data. Thus, the purpose of this study is to determine the major factors influencing the dietary behaviors of expectant mothers as well as to evaluate the prevalence of these practices.

## 1.3. Objectives of the Study

This study aims to assess the prevalence and determinants of dietary practices among pregnant women in Addis Ababa, Ethiopia, in 2024, by determining the prevalence of various dietary practices and identifying the factors that influence these practices, ultimately providing a comprehensive understanding of dietary behaviors during pregnancy in Addis Ababa and contributing to evidence-based interventions aimed at improving maternal and fetal health.

### 1.3.1. General Objective

The overriding objective of the thesis was to assess prevalence and determinants of dietary practices among pregnant women in Addis Ababa, Ethiopia 2024.

### 1.3.2. Specific Objective

More specifically, it was planned to:

- ✓ Assess the prevalence of dietary practices among pregnant women in Addis Ababa, 2024.

- ✓ Identify determinant factors of dietary practices among pregnant women in Addis Ababa, 2024.

## 1.4. Research Questions

- ✓ To what extent do socioeconomic factors, including education, income, and employment status, influence the dietary practices of pregnant women?
- ✓ Do food taboos play a significant role in shaping the dietary choices and practices of pregnant women? If so, how do these taboos impact nutritional intake and overall health outcomes?
- ✓ How do a pregnant woman's health status, including access to healthcare, existing health conditions, and nutritional knowledge, influence their dietary choices and practices?
- ✓ What roles do household practices, including food preparation, storage, and distribution, play in shaping the dietary choices of pregnant women?
- ✓ Does the empowerment of women, including access to education, economic opportunities, and decision-making power, have a positive influence on their dietary practices and nutritional well-being during pregnancy?

## 1.5. Significance of the Study

This study holds significant implications for improving maternal and fetal health in Addis Ababa. By understanding the prevalence and determinants of dietary practices among pregnant women, the research identifies key factors influencing their nutritional choices. This knowledge can be used to develop targeted interventions addressing socioeconomic barriers, food taboos, and limitations in healthcare access. Additionally, the study shed light on the role of household practices and women's empowerment in shaping dietary behaviors. By addressing these issues, the research aims to empower pregnant women with the knowledge and resources necessary to make informed food choices, ultimately contributing to healthier pregnancies and better birth outcomes.

## 1.6. Scope of the Study

The study focused on a number of important areas in order to determine the determinants and prevalence of dietary patterns among expectant mothers. First, it looked at the demographic variables like age, education level, financial status, and cultural background that affect dietary decisions. These elements have a big impact on dietary patterns generally and on getting access to nutrient-dense foods.

The research also investigate how dietary behaviors are influenced by access to healthcare and prenatal education. It is essential to comprehend how the information given by healthcare practitioners influences dietary decisions in order to encourage improved nutrition during pregnancy.

Furthermore, the study investigated how common certain dietary habits are, such eating a lot of fruits and vegetables, whole grains, and prenatal vitamins. Additionally, it will evaluate typical dietary limitations or urges that expectant mother encounter.

## 1.7. Limitation of the Study

There was a number of obstacles to the research on the factors influencing and the frequency of eating habits among expectant mothers. First of all, people may underreport unhealthy meals or over report healthy ones due to social desirability when relying solely on self-reported dietary intake, which might introduce bias. This results in inaccurate perceptions of true eating patterns.

Second, the study's cross-sectional design make it more difficult to determine the causal links between factors and food habits. It is difficult to say if particular factors actually influence food choices or are just related to them in the absence of longitudinal data. Furthermore, because the sample may not accurately reflect the variety of backgrounds among pregnant women, the study inadequately account for cultural differences in eating behaviors. This restrict how broadly the results can be applied.

Moreover, extraneous variables like shifts in the study period's food supply or the state of the economy has an effect on participants' dietary preferences, making the examination of determinants more challenging.

Finally, results skewed by potential confounding variables, such as mental health status or pre-existing medical illnesses, are not sufficiently controlled for. It was necessary to address these restrictions in order to reach solid results and provide useful recommendations.

## 1.8. Organization of the Study

This paper is structured into five comprehensive chapters that systematically address the research topic. The first chapter introduces the background of the study, articulates the problem statement, and outlines the objectives, including both general and specific aims. It also presents the research questions, highlights the significance of the study, and defines the scope of the research. Additionally, this chapter includes a definition of oppression, which is central to the study's focus, as well as an overview of the organizational structure of the paper. The second chapter is dedicated to a thorough review of the existing literature, providing a contextual foundation for the research. In the third chapter, the paper delves into the research methodology, detailing the study description, research design, and data sources, distinguishing between primary and secondary sources. It elaborates on the data collection methods, sampling size and techniques, data analysis methods, and addresses ethical concerns related to the research process. Chapter Four presents the findings of the study, followed by a discussion that interprets and contextualizes these results. Finally, Chapter Five concludes the paper by summarizing the key findings and offering recommendations and conclusion based on the research outcomes.

# CHAPTER TWO: LITERATURE REVIEW

## 2.1. Conceptual Literature Review

### 2.1.1. Definition of Dietary Practice

Dietary practices refer to the regular actions and choices one makes around the amount of food and beverages they consume. It covers food and drink selections, meal schedules and frequency, portion sizes, cooking and preparation techniques, and the environmental, social, ethical, and cultural influences on these decisions ( Harvard. et al., 2020) individual preferences, health requirements, cultural customs, religious convictions, social standing, and accessibility to a variety of food options all influence dietary behaviors.( Harvard.et al., 2020)

A few components of dietary practices are as follows Food Choice, Food Types, The particular foods and drinks selected, include grains, dairy products, fruits, vegetables, and meats.

Dietary Restrictions: Discontinuations due to health concerns, moral convictions (vegan, vegetarian, etc.), or legal requirements (halal, kosher, etc.) (World Health Organization et al., 2019). Patterns of Meals, Meal Timing, the arrangement of meals and snacks (breakfast, lunch, dinner, and snacks) throughout the day:

Dietary practices encompass a range of factors that influence food choices and consumption patterns. These factors can be categorized into several key areas: Firstly, meal frequency refers to how often meals and snacks are consumed, encompassing approaches like multiple small meals or intermittent fasting (Dietetics and Nutrition Academy, et al., 2021). Portion control, which involves managing the amount of food consumed at each meal or snack, is also a significant aspect. Secondly, the selection and quality of ingredients are critical, ranging from processed foods to fresh or organic options (United Nations Food and Agriculture Organization et al., 2021). Social and cultural influences also play a role, shaping dietary choices through traditional food customs, the social function of food in celebrations and gatherings, and cultural dietary practices. Finally, achieving nutritional balance, ensuring a proper intake of macronutrients (fats, proteins, and carbohydrates) and micronutrients (minerals and vitamins), is essential for overall health and well-being (The Academy of Nutrition and Dietetics et al., 2021). Dietary goals, which can encompass specific health objectives like managing diabetes, enhancing

cardiovascular health, or controlling weight, provide further context for understanding individual food choices.

### 2.1.2. Concepts of Dietary Practice

The concepts of Dietary practices are as observable acts or behaviors related to eating habits. Dietary behaviors include a wide range of factors that affect what and how people eat. Among them are nutritional requirements, maintaining a balance between macronutrients (proteins, fats, and carbs) and micronutrients (vitamins and minerals) to meet body requirements (World Health Organization et al., 2020).

Cultural and Religious Influences, Customary meals, meal schedules, and dietary limitations imposed by religious or cultural standards. (United Nations Food and Agriculture Organization (FAO), et al., 2021). Wellness and Health Diets that promote wellness and stave off illness, such as diabetic, heart-healthy, or weight-management regimens. (American Heart Association & Associates et al., 2021). Environmental and Ethical Issues making food choices based on environmental effect (e.g., sustainable eating practices) or ethical convictions (e.g., vegetarianism, veganism) (Working Group on the Environment et al., 2019) Economic Factors, The impact of food costs and income on food availability and choices.

Psychological and Social Factors: Emotional eating, group dining customs, and the significance of food in identity and social interactions, Food Preparation and Cooking Methods: The nutritional content and overall health of food can be influenced by the methods used in its preparation and cooking (Harvard et al., 2020).Availability and Accessibility: The availability of a wide variety of healthful eating options in a particular area or neighborhood. These ideas work together to influence how people or groups relate to food in general and how they eat.

## 2.2. Prevalence of Good Dietary Practice among Pregnant Women

Research on dietary practices among pregnant women highlights a complex and geographically diverse landscape. A study in Nepal revealed that almost 45% of pregnant women exhibited inadequate dietary practices (Shrestha et al.,2016), while research in Nigeria indicated a higher rate of good dietary practices, with 52.9% of pregnant women reporting diverse food consumption (Anyasor et al., 2017). However, a significant portion of Nigerian respondents

(82.2%) also confirmed the practice of food taboos during pregnancy. A study in Raya Azebo, Ethiopia, found that 61.2% of pregnant women had a high Minimum Dietary Diversity Score, suggesting a higher level of dietary diversity (Ahmed et al., 2014). These studies underscore the need for tailored interventions and further research to understand the factors influencing dietary practices among pregnant women, considering the diverse cultural, socioeconomic, and geographic contexts that impact their access to nutritious food.

## 2.3. Determinants of Good Dietary Practice among Pregnant Women

### 2.3.1. Socio Demographic Factors

A study done in Nepal multivariable analysis revealed that women with wealthier households, joint families, employment, and had adequate nutrition knowledge had higher odds of good dietary practice (Shrestha et al., 2016). Factors associated with dietary diversity among pregnant women in the western hill region of Nepal: A community based cross-sectional study.

A study finding in Nigeria showed that a factor that hindered women from maintaining adequate nutritional practices in pregnancy included as low socio-economic status (42.4%), inadequate knowledge about the food item (20.4%), ignorance (13.1%), lack of husband support (12.6%) and forgetfulness (11.5%) were associated with dietary practices among pregnant women (Anyasor et al., 2017).

A research finding revealed that elicited husband support should be organized in order to increase men's knowledge of adequate nutrition intake in pregnancy and also enhance supportive care which would positively affect women's nutritional practice (Anyasor et al., 2017.)

Researches done In Tigray revealed that being government employees, merchant, secured and eating three meals and above were significantly associated with good dietary practices among pregnant women (Ahmed et al., 2014), Assessment of Dietary diversity among Pregnant and Lactating Women and 6 to 23 Months Age Children in Rural Areas of Western, Ethiopian Public Health Institute, Addis Ababa, Ethiopia et al., 2014.)

A research finding in Illu aba bor indicated that low family size had 3 times higher, high wealth status had 3.65 times higher, and high household food security had 2.6 times higher, and wider

birth interval had 2.3 times higher, and were significantly associated with dietary practice of pregnant women (Dereje et al., 2015).

### 2.3.2. Pregnant Women's Health Related Factors

A study done in Dessie revealed that First trimester of pregnancy, history of illness 2 weeks before data collection date, poor perceived severity, perceived benefits and poor self-efficacy were significantly associated with poor dietary practice. Not attending antenatal care (ANC), illness, poor dietary diversity, poor nutrition knowledge, poor dietary practice and poor perceived self-efficacy were significantly associated with under nutrition.(Factors associated with dietary practice and nutritional status of pregnant women in Dessie town, northeastern Ethiopia: a community-based cross-sectional study)

### 2.3.3. Food Taboos

A systematic review and meta-analysis indicated that culture plays a crucial role in shaping "taboos" and food restrictions. These cultural practices are often passed down through families and influenced by community members, particularly those with strong religious or spiritual beliefs. Such restrictions are primarily motivated by concerns over adverse pregnancy outcomes, including risks of abortion, dystocia, and congenital anomalies. Additionally, they are employed as preventive measures to mitigate potential issues in children, such as skin and respiratory disorders (Rocío et al., 2018).

### 2.3.4. Household Preparation and Distribution of Food

Research on dietary practices among pregnant women in Ethiopia reveals varying levels of adequacy. A study in East Gojjam Zone found that 19% of 422 pregnant women had a poor food consumption score, while 16.6% were borderline and 81.5% had acceptable scores (Merhawi et al., 2011). Notably, rural versus urban residence impacted food consumption. Meanwhile, a study in Jille Tumuga, involving 647 pregnant women with a 97.4% response rate, found a lower prevalence of adequate dietary diversity, with only 31.4% demonstrating acceptable dietary practices. Cereals emerged as the most commonly consumed food group in this study (Seid, Mekelitu et al., 2015). These findings highlight the need for further research to understand the

complex factors influencing dietary practices among pregnant women in Ethiopia and to develop targeted interventions to improve nutritional outcomes.

### 2.3.5. Empowerment of Women

A study conducted in Nepal utilized multivariable analysis to demonstrate that women who experienced greater empowerment were significantly more likely to engage in good dietary practices during pregnancy (Shrestha et al., 2016.). This research focused on the factors influencing dietary diversity among pregnant women in the western hill region of Nepal and employed a community-based cross-sectional design. The findings suggest that women's empowerment plays a crucial role in enhancing their dietary choices, which is vital for maternal and fetal healt. (https://doi.org/10.1371/journal.pone.0247085).

In a separate study from Nigeria, researchers found that providing health information in a clear and accessible manner was a critical strategy for improving the dietary practices of pregnant women. This highlights the importance of effective communication and education in promoting

Additionally, research conducted in Illu Ababora revealed several significant associations with dietary practices among respondents. Women with higher educational attainment were found to be 3.5 times more likely to practice good dietary habits compared to their less educated counterparts. Furthermore, those with household food security had 1.6 times higher odds of maintaining better dietary practices. Nutrition knowledge also played a pivotal role, as respondents with greater awareness were 1.75 times more likely to adopt healthy eating behaviors. Lastly, increased meal frequency was associated with a 2.9 times higher likelihood of improved dietary practices (Dereje et al., 2014). These findings underscore the multifaceted factors that influence dietary choices during pregnancy, including education, food security, and nutrition knowledge.

## 2.4. Conceptual Framework

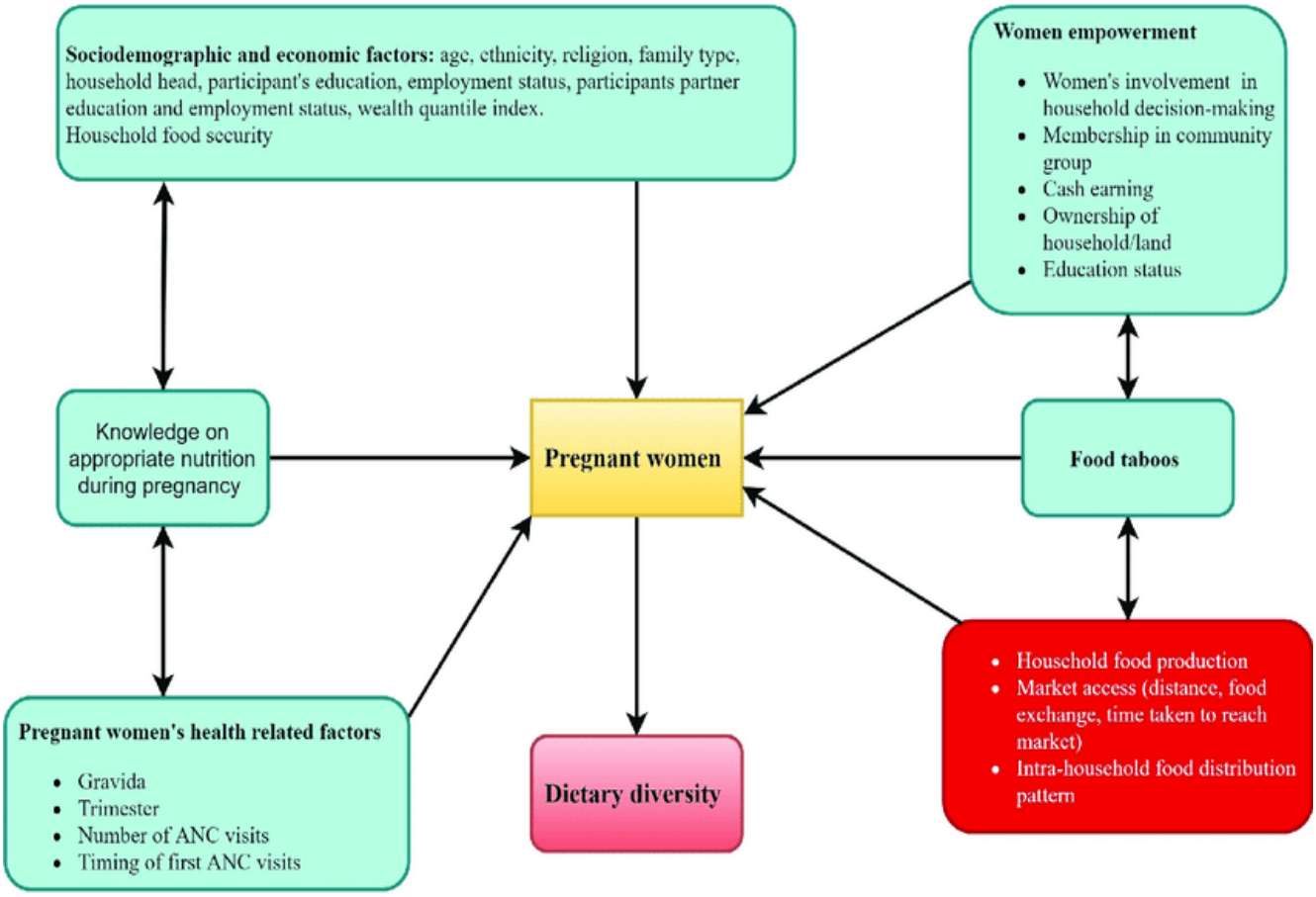



**Figure 1: Conceptual framework on factors associated with dietary diversity.**

A few main elements that make up the conceptual framework for identifying and comprehending the factors that influence the prevalence of dietary practices among expectant mothers. Biological Factors, Physiological changes, nutritional needs, and metabolic adaptations are examples of biological factors that affect dietary patterns during pregnancy. These elements may influence appetite, food preferences, and dietary requirements. Aspects of culture and society, Include things like availability of food supplies, cultural beliefs, customs, and socioeconomic level. These variables can influence eating preferences, meal schedules, and the availability of a wide variety of nutrient-dense foods (Ahmed et al., 2014).

Nutritional Knowledge and Awareness, Stress the significance of having access to trustworthy information regarding a balanced diet throughout pregnancy, as well as knowing prenatal

nutrition requirements. This element may have an impact on eating habits and decision-making.(Ahmed et al., 2014).

Psychosocial and Behavioral Factors, Take care of psychosocial elements like stress, emotional health, social support, and eating-related behavior patterns. During pregnancy, these variables may affect coping strategies, eating patterns, and food cravings.

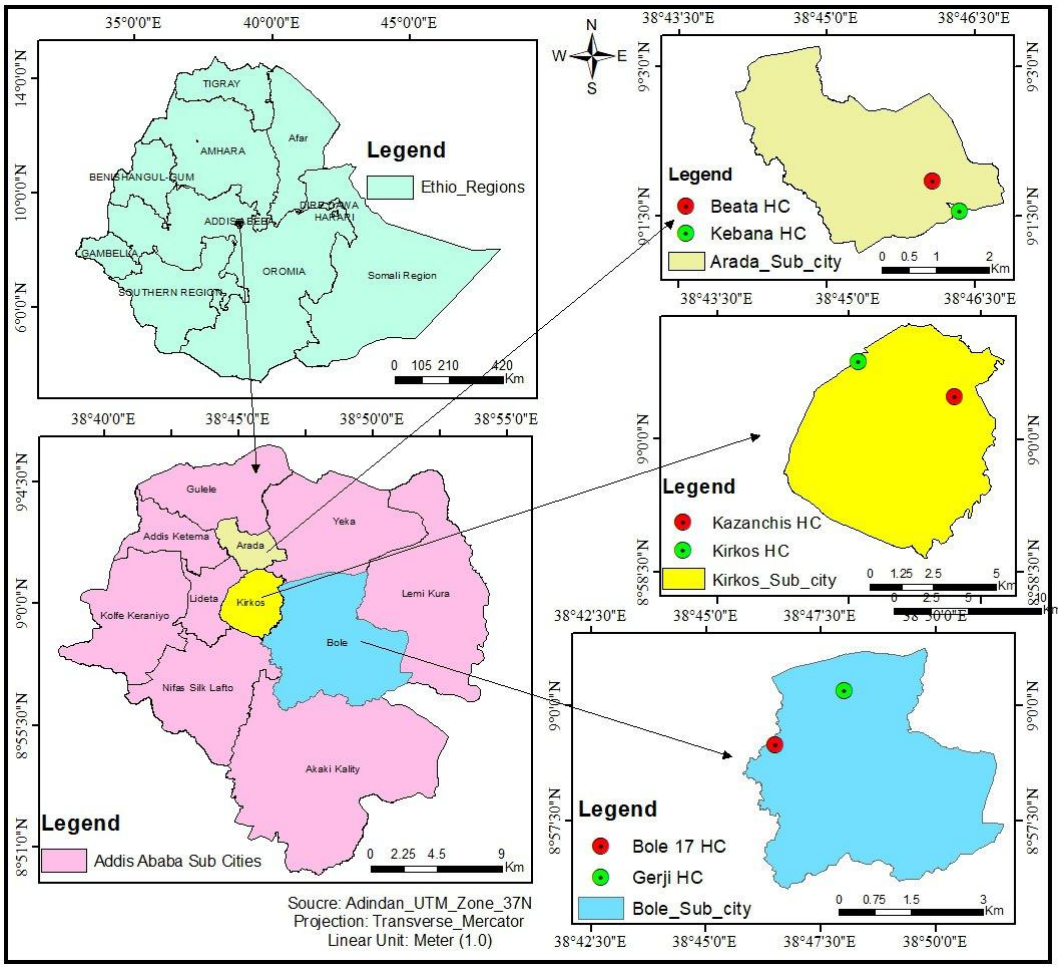
Healthcare Support and Services, Stress the importance of prenatal care services, nutrition education, counseling, and healthcare practitioners in helping expectant mothers adopt a balanced diet. This element may have an impact on following dietary and supplemental recommendations. Environmental Influences, Take into account environmental elements that may have an impact on dietary patterns during pregnancy, such as food availability, food safety, food product marketing, and community resources (Harvard et al., 2020).

Conditions and Symptoms Associated with Pregnancy, Understand how food decisions and nutritional requirements are impacted by medical disorders (such as gestational diabetes, and preeclampsia) and pregnancy-related symptoms (such as, nausea and vomiting). Programs and Interventions, Aim to improve maternal nutrition, encourage good eating habits, and remove obstacles to following the best nutritional guidelines during pregnancy by using interventions, educational activities, and legislative initiatives.(Alemayhu et al., 2015). Through the integration of these elements into the conceptual framework, scholars and practitioners of public health can conduct a thorough evaluation of the factors influencing and the frequency of dietary habits among expectant mothers. This will enable them to devise focused approaches aimed at enhancing maternal and fetal well-being via proper nutrition during gestation (WHO et al., 2019).

# CHAPTER THREE: METHOD AND MATERIALS

## 3.1. Description of Study Setting

The study was conducted in Addis Ababa, the capital city and also the largest city in Ethiopia which covers 530.14 square kilometers. Addis Ababa is found with an altitude of 2355 meters and is located at $9^0$ 1'48" N with subtropical highland climate. The city has three layers of administration: city government, 11 sub cities and 123 woredas administrations. Based on the 2007 Census conducted by the Central Statistical Agency of Ethiopia (CSA), Addis Ababa has a total population of 2,739,551, of whom 1,305,387 are men and 1,434,164 women; all of the population is urban inhabitants.



## 3.2. Study Design and Period

A cross-sectional institutional study was carried out between December 2023 and June 2024 to examine dietary practices among pregnant women in Addis Ababa, Ethiopia. This research aimed to gather detailed insights into the nutritional habits and food choices of expectant mothers within the city.

## 3.3. Source Population

The study included all pregnant women who were receiving antenatal care services at government health centers located in the Kirkos sub-city, specifically at Kazanchis and Kirkose Health Centers. Additionally, participants were recruited from Bole sub-city, particularly from Bole 17 Health Center and another designated center. Furthermore, pregnant women attending antenatal care in Arada sub-city, including those at Beata and Kebena Woreda 7 Health Centers, were also included in the study. This comprehensive approach aimed to capture a diverse range of dietary practices among expectant mothers across these specific areas in 2024.

### 3.3.1. Study Population

The study focused on all pregnant women receiving antenatal care services at six designated health centers located within the Bole, Kirkose, and Arada sub-cities in 2024. This included women attending routine check-ups, screenings, and health education sessions specifically aimed at supporting maternal and fetal health during pregnancy. The selected health centers were strategically chosen to ensure a diverse representation of the population, reflecting various socioeconomic backgrounds and healthcare access levels within these urban areas.

### 3.3.2. Study Unit

Pregnant women who were attending antenatal services at the selected health centers were randomly chosen for participation in the study. These women had registered for care at the facilities, ensuring that they were actively engaged in their prenatal health management. The random selection process aimed to create a representative sample of the diverse population accessing these antenatal services, allowing for a comprehensive analysis of maternal health trends and outcomes.

## 3.4. Eligible Criteria

### 3.4.1. Inclusion Criteria

Pregnant women who agree to participate and provide the required information was included in the study. In order to gather precise information and insights about eating patterns, this transparency is crucial.

Participants also need to be actively involved in their prenatal treatment and show that they are committed to adhering to the medical advice. This makes it possible to examine the factors impacting pregnant women's food choices more accurately since it guarantees that the sample consists of women who are aware of their health demands and are probably better at following their diets.

### 3.4.2. Exclusion Criteria

Because reliable information collection requires effective communication, pregnant women who are deaf or hard of hearing were not be included in this study. This guarantees that every participant can participate actively in the research and comprehend the questions posed.

Furthermore, women who are pregnant and have just started prenatal care were not be included since they don't not have the knowledge or expertise to offer accurate statistics. In order to preserve the integrity and caliber of the research findings, participants must also be willing to participate in the study; those who decline to answer questions were not be include.

## 3.5. Sampling Techniques

### 3.5.1. Sample Size Determination

The required sample size was determined by using single population proportion formula by taking 29.46% of expected prevalence dietary practice among pregnant women , assuming 5% margin of error, 1.5 design effect and 95% confidence level, Z at alpha over two is 1.96, and 10% for non-response rate. The calculated sample size will be 362.

$$n = \left(z\left(\frac{\partial}{2}\right)\right) 2.p.(1-p)/d2$$

$n = \frac{(1.96)^2 \times 0.2946 \times (1-0.2946)}{(0.05)^2}$

**n=319** participants x design effect plus 10% non-respondent rate

**n=526** total sample size who will be included in the study**.**

### 3.5.2. Sampling Procedure

Stratified multistage sampling technique was employed to select the participants, from all eleven sub cities three sub cities (30%) called Bole, Arada and Kirkos are selected by simple Random sampling technique and 30% health centers are selected from Kirkos, Arada and Bole sub cities were selected through subsequent staging.

## 3.6. Dependent Variable

The actual dietary practices of the pregnant women, such as their intake of certain nutrients, food types, or overall dietary quality, could be the dependent variable in the study on the determinants and prevalence of dietary practices among pregnant women.

## 3.7. Independent Variable

A variety of characteristics, such as socioeconomic class, education level, cultural background, access to healthy food options, awareness about nutrition during pregnancy, and social support, could be considered independent variables that could impact the dietary patterns of expectant mothers. These independent variables may aid in the understanding of the factors influencing pregnant women's eating patterns and the frequency of particular dietary practices in this population.

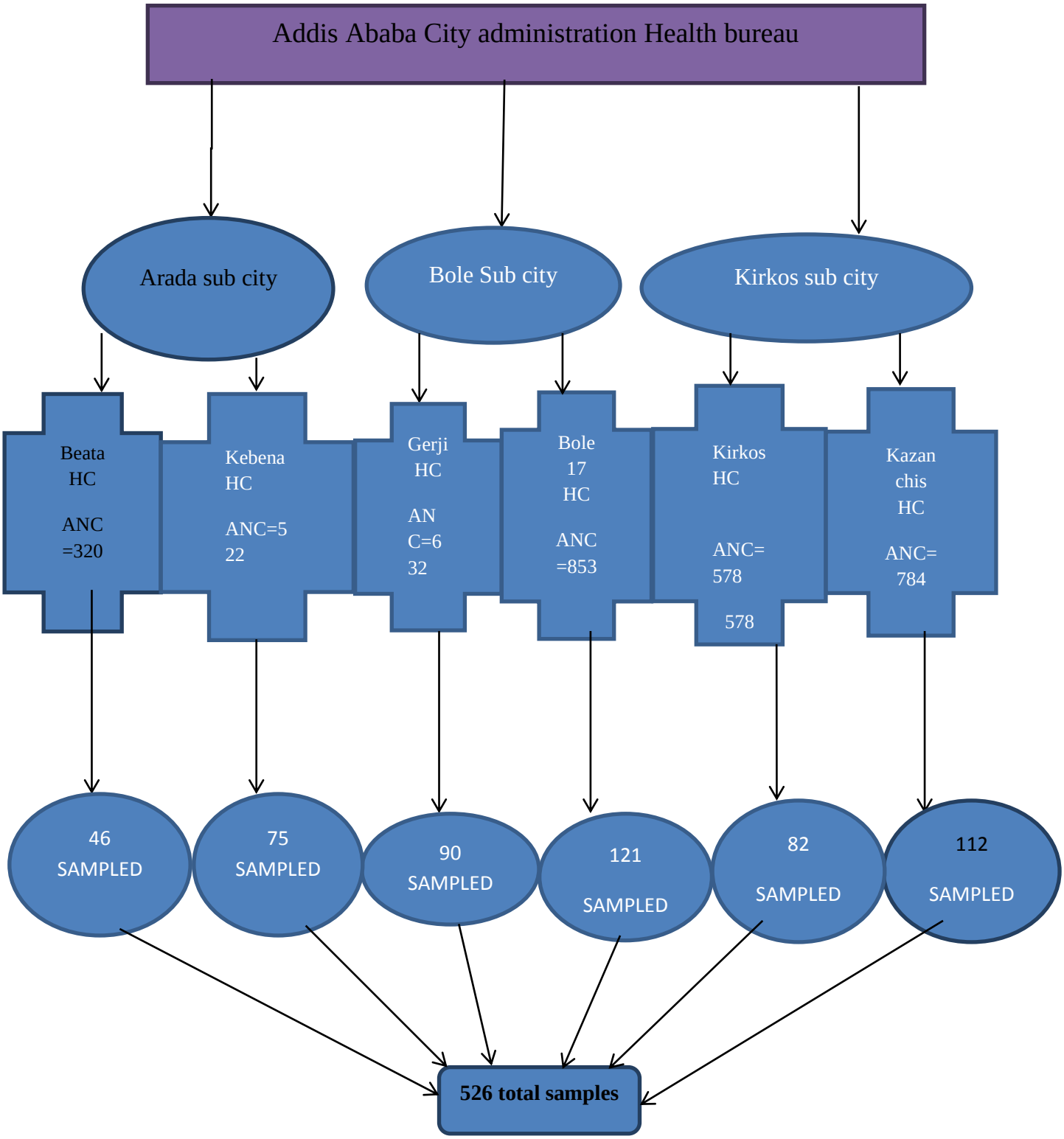



**Figure 2: Scheme presentation of sampling procedure**

## 3.8. Tools of Data Collection

Data associated with all independent variables was collected with the structured questionnaire. FAO and WHO Food frequency questionnaire to assess the nutritional determinants was used. The questionnaires were modified according to the objective of the study. 4 data collectors and one supervisor was participated. For data collection, each eligible participant were interviewed and took from their data

## 3.9. Techniques of Data Analysis

The data were entered using EpiData version 3.1 and were exported to statistical package for social science (SPSS version 25), will be used to analyze and compute the data related to the nutritional status of participants. Descriptive and inferential statistics was employed. Frequencies, proportion and summary statistics were used to describe the study population In relation to relevant variables.

Logistic regression were fitted to identify the association between dependent and independent variables. Bivariable analysis was conducted to select candidate variables to initial multivariable model. Those variables that show association with dependent variable at p- value less than 0.2 will be included into initial multivariable logistic regression model. Both crude and adjusted odds ratio with their corresponding 95% confidence interval were used to determine the strength of association. Assumptions of logistic regression was checked before final multivariable analysis using probability graph and co linearity diagnostic (Variance inflation factor and correlation matrix).If Variance inflation factor is >10% there is collinearity. Final multivariable model goodness of fit was checked using classification table percentage, Hosmer and Lemeshow chi-square test and log likelihood chi-square test. If Hosmer and Lemeshow is >0.05% the model is fit, whereas<0.05% the model is not fit. The p value of less than 0.05 were used to declare the statistical significance of the finding in this study. The result was presented using text and tables based on the types of data.

## 3.10. Ethical Consideration

Ethical approval was obtained from Institutional Research Review Board (IRB) of at Addis Ababa University, College Of Development Studies and Center for food Security Studies.

The permission letter also obtained from Addis Ababa city administration health bureau before conducting the study. Ethical permission to carry out the study obtained from Addis Ababa city administration health bureau for health centers. Pregnant women at the selected health centers were informed about the procedures and the purpose of the study.

Written informed consent was obtained from all pregnant mothers that were included in the study before data collection started. The participation shall be purely voluntary, and they had right not to answer any part or all of questions and not to participate on any of this research

# CHAPTER FOUR: RESULT AND DISCUSSION

## 4.1 Demographic Characteristics of the Respondent

The demographic characteristics of the 526 pregnant women surveyed in Addis Ababa provide insights into the educational attainment and marital status of the population. The majority of participants (31.94%) had a high school education, followed closely by those with a TVET (Technical and Vocational Education and Training) qualification (30.21%). A smaller proportion of respondents held university degrees (18.40%), while 13.54% reported "other" levels of education, and 5.9% had completed elementary school. This suggests that while a significant portion of the participants had achieved some level of secondary education, a substantial portion also had limited formal schooling.

Regarding marital status, the survey reveals a slight majority of participants (57.88%) are married, while the remaining (42.12%) are unmarried. This finding sheds light on the diverse family structures and social contexts within the study population. These demographic insights are essential for understanding the social and economic factors that may influence dietary practices and health outcomes among pregnant women in Addis Ababa. It is particularly important to consider the potential impact of educational attainment on access to information and resources related to nutrition, as well as the influence of marital status on decision-making regarding dietary choices and access to support networks. Further analysis of the data, incorporating these demographic factors, can offer valuable insights into the broader socioeconomic context of maternal health in Addis Ababa.

**Table 1: Socio-demographic of pregnant women in Addis Abeba, Ethiopia, 2024**

| Variable | Number | Percentage (%) |
|---|---|---|
| **Highest educational level** | | |
| Elementary | 17 | 5.9% |
| High school | 92 | 31.94% |
| Other | 39 | 13.54% |
| TVET | 87 | 30.21% |
| University degree | 53 | 18.40% |
| **marital Statues** | | |
| Married | 158 | 57.88 % |
| Un married | 115 | 42.12% |

## 4.2. Prevalence of Dietary Practice

From the total respondents, 7.86%, 13.06% and 11.38% of them had high dietary diversity, high food variety score and high consumption of animal source food, respectively. The average score of 3.97 ±0.6714, 0.117 ± 0.373 and 3.165 ± 2.824 were Dietary Diversity Score (DDS), Animal Source Foods (ASFs) and Daily Meal frequency, respectively. The prevalence of the appropriate dietary practice of pregnant women in the present study was 3.09% below Table 2. .

(53.35%) constitute a major part of women's diet. Consumption of other fruits (1.7%) was minimal. Figure 1.This monotonous diet may reflect both their cultural eating habits and lower availability of a variety of foods during the survey period.

**Table 2: Dietary practices of pregnant women**

| Variable | Number | Percentage (%) |
|---|---|---|
| **Dietary Diversity Score (DDS)** | | |
| Low | 258 | 92.14% |
| High | 22 | 7.86% |
| Mean (± SD) | 3.97 ±0.6714 | |
| **Animal Source Foods (ASFs)** | | |
| Low | 253 | 86.94% |
| High | 38 | 13.06% |
| Mean (± SD) | 0.117 ± 0.373 | |
| **Meal frequency** | | |
| **<4** | 257 | 88.62% |
| >=4 | 33 | 11.38% |
| Mean (± SD) | 3.165 ± 2.824 | |
| **Dietary practice** | | |
| Inappropriate | 282 | 96.91% |
| Appropriate | 9 | 3.09% |

**Table 3: Habit of taking by pregnant women**

The data on smoking habits reveals that a minimal number of respondents (1, or 0.35%) chose not to disclose their smoking status, indicating that most were willing to share this information. A significant majority, 187 individuals (64.71%), reported they do not smoke, suggesting a low

prevalence of smoking within this population. However, a considerable portion, 77 respondents (26.64%), either provided unclear responses or were unsure about their smoking habits, while 25 individuals (8.65%) identified as smokers. This combination highlights that smoking is generally uncommon among the surveyed group.

When examining alcohol consumption, an impressive 254 respondents (87.89%) reported abstaining from alcohol, which may point to cultural norms or health-related motivations. Only a few individuals admitted to drinking alcohol, with just 6 (2.8%) stating their consumption quantity was unknown, and 8 (2.77%) indicating they drink between 1 to 20 beverages per week. Additionally, 21 respondents (7.27%) opted not to disclose their drinking habits. Regarding alcohol use during pregnancy, an overwhelming majority (273, or 94.14%) reported abstaining from alcohol, reflecting a strong awareness of the associated risks, though 17 (5.86%) did indicate they consumed alcohol while pregnant, signaling a concerning area for potential education.

In terms of current substance use, all 290 respondents reported no use of drugs, suggesting a profile of a healthy population or effective prevention efforts in place. Regarding physical disabilities, only 7 individuals (2.44%) reported having a disability, while a vast majority (280, or 97.56%) do not, indicating overall physical capability within the group.

The data on appetite reveals some concerning trends: 59 respondents (20.42%) reported a fair appetite, suggesting some nutritional concerns, while only 12 (4.15%) indicated a good appetite. Alarmingly, 218 individuals (75.43%) reported a poor appetite, which could point to underlying health issues or stressors affecting their nutrition. Overall, while the findings indicate positive trends in substance use and physical capability, the high percentage of individuals with poor appetite suggests a need for targeted interventions to improve nutritional health and address any contributing factors.

| Variable | Number | Percentage (%) |
|---|---|---|
| **Smoking** | | |
| Do not smoke | 282 | 97.58% |
| Number of Cigarettes per day (1 - 96) | 1 | 0.35% |
| Smoked, but quantity unknown | 5 | 1.73% |
| Unknown or refused | 1 | 0.35% |
| **Any else smoke** | | |
| No | 187 | 64.71% |
| Unknown | 77 | 26.64 % |
| Yes | 25 | 8.65% |
| **Alcohol drink** | | |
| Did not drink | 254 | 87.89% |
| Drank, but quantity unknown | 6 | 2.8% |
| Number of drinks per week (1 - 20) | 8 | 2.77% |
| Unknown or refused | 21 | 7.27% |
| **Alcohol drink during pregnant** | | |
| No | 273 | 94.14% |
| Yes | 17 | 5.86% |
| **Current substance use** | | |
| None | 290 | 100% |
| Yes | 0 | 0% |
| **Physical disability** | | |
| Yes | 7 | 2.44% |
| No | 280 | 97.56% |
| **Appetite** | | |
| Fair | 59 | 20.42% |
| Good | 12 | 4.15% |
| Poor | 218 | 75.43% |

## 4.3. Factors Associated with Dietary Practice

The table provides insights into dietary practices, comparing individuals with appropriate dietary practices (n=9) against those with inappropriate practices (n=282). The analysis includes both crude odds ratios (COR) and adjusted odds ratios (AOR), each accompanied by 95% confidence intervals (95% CI) and p-values to assess statistical significance.

Starting with appetite, individuals with a good appetite are significantly more likely to have appropriate dietary practices compared to those with a fair appetite, as indicated by a COR of 6.87 (95% CI: 1.42, 33) with a p-value of 0.016, suggesting a strong association. However, after adjusting for potential confounders, the AOR drops to 2.35 (95% CI: 0.32, 17) with a p-value of 0.398, indicating that this association may not remain statistically significant once other factors are considered. This suggests that while a good appetite initially appears to be linked to appropriate dietary practices, the relationship weakens after adjustment.

Conversely, individuals with a poor appetite show a stark contrast. The COR of 0.06 (95% CI: 0.007, 0.58) with a p-value of 0.014 indicates that those with a poor appetite are significantly less likely to have appropriate dietary practices. This finding is further supported by the AOR of 0.091 (95% CI: 0.008, 0.93) with a p-value of 0.044, demonstrating a statistically significant association even after adjustments. This suggests that a poor appetite is strongly linked to inappropriate dietary practices, reinforcing the need for interventions aimed at improving appetite to enhance dietary outcomes.

Lastly, regarding weight, the COR of 1.19 (95% CI: 1.08, 1.3) with a p-value less than 0.001 indicates that higher weight is associated with appropriate dietary practices. The AOR also reflects this trend, at 1.15 (95% CI: 1.023, 1.28) with a p-value of 0.011, confirming that weight remains a relevant factor in dietary practices after adjusting for confounders. Overall, the table highlights important relationships between appetite, weight, and dietary practices, emphasizing that both good appetite and higher weight are associated with more appropriate dietary behaviors, while a poor appetite is a significant risk factor for inappropriate practices.

**Table 4: Factors associated with dietary practice among pregnant women**

| variable | Dietary Practice | | COR(95%) p-value | AOR(95%) p-value |
|---|---|---|---|---|
| | Appropriate (n=9) | Inappropriate (*n* = 282) | | |
| **Appetite** | | | | |
| Fair | 59 | 20.42% | Reference | |
| Good | 12 | 4.15% | 6.87(1.42,33) p-0.016 | 2.35(0.32, 17)p-0.398 |
| Poor | 218 | 75.43% | 0.06(0.007, 0.58) p-0.014 | 0.091(.008, 0.93)p-0. 0.044 |
| **Weight** | | | 1.19(1.08, 1.3)p-0.00 | 1.15(1.023 1.28) p-0.011 |

## 4.4. Discussion

In order to meet their own needs for additional energy and micronutrients as well as those of the developing fetus, pregnant women should make plans to eat a sufficient quantity and quality of food (Mora et al., 2007). A mother's mortality, the death of a fetus, birth deformities, a child's diminished physical and mental capacity, fetal growth restriction, and unfavorable prenatal outcomes are all results of inadequate consumption of both macro- and micronutrients during pregnancy. (Thompson etal.,2010) Additionally, inadequate consumption of certain foods during pregnancy has an adverse effect on the production of milk. Expectant mothers should schedule enough time to eat a sufficient amount of food that meets their needs for micronutrients and additional energy.

both for the growth of the fetus and for herself (Mora et al., 2007).Maternal mortality, fetal and neonatal mortality, birth abnormalities, reduced physical and mental capacity of the child, fetal growth restriction, and unfavorable prenatal outcomes are all results of inadequate intake of both macro- and micronutrients during pregnancy and pre pregnancy(Thompson et al., 2010). Adequate consumption of foods high in polyunsaturated fatty acids (PUFAs) negatively impacts the development of the brain and eyes. Throughout pregnancy, the mother's food intake has a significant impact on the fetus's delivery of DHA. (Ferrelli et al., 2016) Additionally, inadequate consumption of certain foods during pregnancy has an adverse effect on the production of milk.

In the present research, only 4% of expectant mothers demonstrated adequate dietary habits, a statistic deemed insufficient for fostering maternal and fetal well-being. The examination

uncovered several critical factors that impacted these dietary habits. Particularly, certain food restrictions placed on the women, their marital status, failure to comply with prescribed medications before pregnancy, and their educational attainment were all significant determinants of dietary behavior in Addis Ababa, Ethiopia. These results underscore the intricate relationship between socio-economic and personal factors that can negatively influence dietary choices among pregnant women in this region. For the health of the mother and the unborn child, adequate nutrition during pregnancy is crucial (Kramer et al., 2016).

Growing evidence shows that insufficient intake of a high-quality, well-balanced diet during pregnancy greatly impacts both the health and development of the fetus. A lack of essential nutrients can impede fetal growth and development, potentially leading to various negative birth outcomes. For example, shortages in critical vitamins and minerals may cause issues like low birth weight, premature birth, and developmental delays. Research has demonstrated that a comprehensive diet abundant in fruits, vegetables, whole grains, and lean proteins is essential for supplying the necessary nutrients that assist the detailed processes of fetal development. Therefore, the absence of access to or compliance with these dietary recommendations during pregnancy can have major consequences not only for the immediate well-being of the baby but also for long-term developmental paths. As emphasized by (Gogoi et al., 2020) the significance of nutritional quality during this critical time cannot be understated, as it plays a critical role in influencing both maternal and fetal health outcomes.

Numerous women encounter a decrease in appetite and face difficulties linked to low socioeconomic status, which can greatly affect their nutritional consumption. Consequently, they frequently do not obtain enough micronutrients when they become pregnant. This lack of nutrients is worrisome as pregnancy heightens the body's needs for crucial vitamins and minerals vital for both the health of the mother and the development of the fetus. When micronutrient levels are insufficient, women may find it challenging to meet the needs of their evolving bodies, potentially leading to negative health effects for both themselves and their children. (Kramer et al., 2017), and they are more susceptible to malnutrition (Kant, Thompson et al., 2017).

In resource-constrained nations, maternal undernutrition and micronutrient deficiencies are linked to incorrect dietary practices, according to several epidemiological research (Talegawka et al., 2013). The diet of a pregnant woman must include enough nutrition for the mother, the fetus,

and efficient nursing. Despite this, only a few pregnant women in the current study reported following an optimal diet.

Pregnant women who have a diverse diet are more likely to have adequate nutrition, consume more nutrients, and have higher nutritional status (Tsegaye et al., 2020). Research revealed that eating foods derived from animals ensures pregnant women in impoverished nations get the micronutrients they need (Workicho et al., 2011). While eating food derived from animals contributes significantly to nutritional quality, the practice declines in low-income areas (Torheim et al., 2003). In the current study, we found that a mere 7.86% of expectant mothers had a high score for dietary diversification. Nonetheless, during the poll, 13.06% of the women reported eating items derived from animals. According to several Ethiopian research, there is currently less dietary diversity during pregnancy (Alemayehu, et al., 2015).

Our research shows a significant link between the educational levels of expectant mothers and their eating patterns. Specifically, those with higher educational attainment were more likely to have healthier food choices and a more diverse diet. Conversely, when comparing various occupational categories, it was observed that housewives generally had poorer dietary habits than merchants. This indicates that a woman's educational background is a key factor in determining the nutritional decisions made during pregnancy, affecting their health as well as that of their developing children are more restricted to domestic duties and financially reliant on their partners and family. This may be the case because women who contribute to providing financial support for their families are more likely to be employed, have better access to a variety of foods, and follow healthy diet plans. This implies that boosting women's contribution to family revenue generation, decision-making authority, and economic independence was strengthen a program to improve women's nutrition.

The results of this research indicated that married women with a minimum of a high school education displayed improved dietary habits. This can likely be credited to the impact of educated partners, who are more inclined to promote healthy eating due to their increased understanding of the advantages of proper nutrition during pregnancy it is anticipated that pregnant women who receive dietary advice will display a more varied and balanced diet than those who do not have access to nutritional support. This expectation is grounded in the idea that organized dietary recommendations can enable expectant mothers to make knowledgeable food

selections that include a broader range of nutrients essential for both their well-being and the growth of their unborn child. By obtaining personalized guidance, these women are more likely to include various food groups in their meals, such as fruits, vegetables, whole grains, lean proteins, and healthy fats. Conversely, those without this assistance may depend on less diverse food choices, potentially overlooking essential vitamins and minerals. Therefore, providing nutritional counseling could greatly influence the dietary habits of pregnant women, finally leading to improved maternal and fetal health results.

In Ethiopia, and in numerous prosperous nations, utilizing alcohol and the habit of smoking cigarettes have become widely accepted behaviors. Nonetheless, there is a growing recognition of the long-term health effects connected to these practices. The results from the current research emphasize the essential necessity of implementing targeted strategies designed to decrease the occurrence of unhealthy eating habits during pregnancy. Such strategies are important not only for enhancing maternal health but also for protecting the health of the developing fetus. By addressing these challenges proactively, we can strive to improve overall health outcomes for both mothers and their children.

Thus, it is important to regularly inform expectant mothers about the harmful effects of alcohol intake, and cigarette smoking, and encourage them to make better nutritional choices. The following are some of this study's strengths: To evaluate dietary practices, validated food frequency questionnaires were employed. Key informants from the study area who were familiar with the local way of life, culture, and food consumption were consulted while establishing food items. When interpreting our results, it is important to take into account some constraints, such as the following: The cross-sectional structure of the data restricts the ability to conclude the causal relationships between dietary practices and their correspondences, as well as between dietary diversity and correlates. Additionally, because the sample was only collected during one season, the results cannot be applied to other contexts.

# CHAPTER FIVE: CONCLUSION AND RECOMMENDATION

## 5.1. Conclusion

The survey performed in the Addis Ababa area shows that pregnant women are not following optimal dietary habits. The results indicate that those who play a more important role in financially supporting their families encounter various challenges that negatively influence their nutritional decisions. In particular, women who contribute to their household income, support their partners' education, and navigate dietary restrictions often struggle to access essential resources.

Also, the research emphasizes a notable link between these factors and the eating habits of pregnant women. It implies that the financial and educational duties these women bear may hinder their ability to focus on maintaining healthy eating practices. What's more, the survey emphasizes that poor eating habits and nutrition-related behaviors can adversely impact nutritional health during pregnancy. These harmful practices often stem from a lack of knowledge regarding proper nutrition, cultural traditions, and taboos, and a limited grasp of the important connection between diet and overall well-being. This lack of understanding can result in decisions that jeopardize both maternal and fetal health.

In summary, the study emphasizes the importance of focused educational programs that equip pregnant women with information about nutritious eating habits and tackle the socioeconomic challenges they encounter in obtaining healthy food.

To encourage optimal prenatal nutrition, it is essential to create and implement nutrition policies, programs, and interventions that emphasize women's enablement. These efforts should aim to provide women with the information and resources they need to make knowledgeable dietary decisions for themselves and their families. What's more, it is important to involve partners in this initiative by educating them about the important advantages of a nutritious diet for expectant mothers and their developing babies. By cultivating an environment where both partners recognize and appreciate proper nutrition, we can establish a supportive framework that improves the overall health of pregnant women.

What's more, addressing the specific needs of pregnant women necessitates a cooperative approach that encourages active participation from their partners. By promoting the notion that husbands and family members have an essential role in making sure that pregnant women obtain the necessary nutrition, we can encourage a culture of ongoing care and support. This can be accomplished through focused outreach initiatives that emphasize the significance of shared responsibility in upholding healthy eating habits during pregnancy. Finally, enabling women while also promoting supportive actions from their partners will enhance dietary practices, benefiting both maternal health and fetal growth

To guarantee that pregnant women obtain the necessary nutrition, it is critical to involve religious leaders and key community figures in initiatives aimed at changing societal behaviors regarding maternal nutrition. These individuals often have considerable influence in their communities and can effectively convey the significance of appropriate dietary habits during pregnancy. By including them in conversations and educational programs, we can promote a greater awareness of maternal health and nutrition.

Their support and active involvement can help challenge and alter current social norms, especially those related to food taboos that may hinder the dietary options of pregnant women. As these leaders promote healthier eating habits, they can inspire community-wide changes in perspective, eventually encouraging a culture that emphasizes the health and well-being of mothers and their babies. This collaborative strategy not only enables expectant mothers but also enhances the community's dedication to promoting maternal health.

These adherence levels are frequently influenced by socioeconomic position, education, cultural attitudes, and availability of healthcare resources. As a determinant Important factors that may be found include in Socioeconomic Factors, Improved dietary habits are frequently correlated with higher income and education levels. Cultural Influences, Customs and beliefs have a big influence on what people eat. Health literacy, making educated food decisions requires an understanding of nutritional recommendations and the significance of a balanced diet. Access to Resources, A key factor in determining eating habits is the availability of nutritious food alternatives and prenatal care services. Indications for Interventions, Based on education, accessibility, and community support, the results may point to the necessity of focused interventions to enhance nutritional patterns among expectant mothers so enhancing the health of

both the mother and the fetus requires addressing the prevalence and determinants of dietary behaviors among pregnant women.

## 5.2. Recommendation

Promoting maternal and fetal health requires knowing how common certain eating patterns are among expectant mothers. The following guidelines can be used to evaluate the factors that influence the frequency of eating habits among expectant mothers.

Increasing awareness about the eating habits of pregnant women is essential for comprehending the various factors that affect their food choices. This involves looking into food preferences, cultural influences, nutritional knowledge, and the obstacles they encounter in maintaining a balanced diet. To obtain more in-depth insights, conducting interviews can be beneficial; these should concentrate on specific food groups that are typically consumed by pregnant women. Asking detailed questions about favorite foods, portion sizes at different meals, and how often they eat each day can yield important information. What's more, examining their approaches to dietary supplements, including what supplements they use, the dosages, and the rationale behind their selections can further deepen understanding.

To effectively evaluate the nutritional health of expectant mothers, various assessment tools can be employed. Dietary recall interviews enable participants to reflect on their food consumption from the past 24 hours or several days, offering valuable insights into their dietary patterns and pinpointing deficiencies in nutritional intake. Food frequency questionnaires (FFQs) assist researchers in determining the frequency of specific food items consumed over a defined time period, which helps in identifying possible nutrient deficiencies or surpluses. Also, gathering anthropometric data, such as weight, height, and body mass index (BMI), offers objective measures of nutritional status, aiding in the evaluation of whether pregnant women are within healthy parameters and identifying risks linked to under nutrition or over nutrition.

By using these evaluation techniques, healthcare providers can collect critical information to support targeted interventions. This method not only assists in identifying excesses or shortages in essential nutrients but also guides strategies for enhancing the overall nutritional well-being of pregnant women. Overall, a comprehensive approach that integrates increasing awareness with

detailed nutritional assessment will be critical in encouraging healthier eating habits among pregnant women.

Take into Account Cultural and Socioeconomic Factors, When evaluating dietary behaviors among pregnant women, take into account cultural views, customs, socioeconomic status, access to food resources, and educational attainment. These elements may have an impact on dietary habits and food preferences.

Work together with healthcare professionals, Collaborate closely with obstetricians, gynecologists, nutritionists, and other medical professionals to gather information on expectant mothers' eating habits during prenatal visits. Healthcare providers can assess nutritional sufficiency and provide advice on eating healthily during pregnancy and before pregnancy occurs

Examine the gathered information to spot patterns in pregnant women's eating habits, such as nutritional inadequacies frequently encountered, adherence to prenatal nutrition recommendations, or obstacles to a balanced diet. Programs for education and focused interventions can be informed by this knowledge.

Encourage Nutrition Education and Counseling, to improve expectant mothers' understanding of prenatal nutrition, healthy eating practices, and the significance of essential nutrients throughout pregnancy, provide nutrition education sessions, counseling, and support groups. Give helpful advice on how to manage pregnancy-related symptoms, plan meals, and ensure food safety.

Tracking changes over time is essential for assessing the effectiveness of interventions and public health initiatives focused on enhancing maternal nutrition. By methodically observing dietary patterns among pregnant women, we can acquire valuable insights into how these programs impact their food choices. Consistent monitoring and data collection enable us to evaluate the advancements made and determine specific areas that may require additional focus or enhancement. This continuous assessment not only displays effective strategies but also discovers knowledge gaps or resource shortages that could impede optimal maternal nutrition. Eventually, a comprehensive understanding of these factors will enable us to adjust our methods and improve the overall health outcomes for mothers and their children.

By adopting these suggestions, researchers, public health authorities, and healthcare workers can acquire a more major insight into the various elements that affect the dietary habits of pregnant women and the occurrence of particular eating patterns in this demographic. This thorough comprehension assists the identification of critical factors like cultural aspects, socioeconomic conditions, and availability of nutritional resources that influence these dietary selections. Equipped with this information, stakeholders can formulate targeted approaches aimed at encouraging optimal nutrition throughout pregnancy. These approaches can be customized to meet the specific requirements of different communities and groups, finally aiding both maternal and fetal health. By prioritizing nutritional interventions that are based on research and reflect the realities of pregnant women's lives, public health programs can improve the overall welfare of mothers and their unborn children, resulting in better health outcomes for both.

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Dereje TsegayeDepartment of Nutrition and Dietetics, Institute of Health, Jimma University, Jimma, Ethiopia Correspondencederetsegaye@gmail.com

Dereje TsegayeDepartment of Nutrition and Dietetics, Institute of Health, Jimma University, Jimma, EthiopiaCorrespondencederetsegaye@gmail.com

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# ANNEX

**Annex I**: Information Sheet

Addis Ababa university school of developmental study department of food security currently I will be undertaking research on a topic entitled determinants of dietary practice among pregnant woman in selected governmental health centers. the aim of this form is to make the concerned body clear about the purpose of the research, data collection procedure and get permission to conduct the research.

**The objective of the study**: entitled determinants of dietary practice among pregnant woman in selected governmental health centers

**Design of the study**: institution based, cross-sectional design.

**Risks and benefits**: The result of the study helps programmers or policy makers to design intervention related to determinants of dietary practice. In this way you may get benefit from the intervention policy. There is no payment and risk or discomfort as a result of Participating in this study except that you lost your time.

**Confidentiality;** All information given by you will be kept strictly confidential. Any of your personal information will not register. The information obtained in this study will be used only for research purposes.

Address of the principal investigator:

Name –Rodas Mesfin

Email –rodasmesfin48@gmail.com

Supervisor: Name_____ Signature: _____ Date: _____

Phone- +251921925561

1. የሚከተሉትን ጥያቄዎች ለመመለስ ፈቃደኛ ነሽ?

አዎ

አይ

2 የእርስዎ ስም

3. ምን ያህል የትምህርት ክፍሎችን አጠናቅቀዋል?

የመጀመሪያ ደረጃ

ሁለተኛ ደረጃ ትምህርት ቤት

የቴክኒክና ሙያ ትምህርትና ሥልጠና

የዩኒቨርሲቲ ዲግሪ

ሌላ

4. የጋብቻ ሁኔታ

ያገባ

ያላገባ

5. የወር አበባሽ ቀን ስንት ነበር?

6. ልጅዎ መቼ ነው የሚመጣው?

7. በፊት ክብደትዎ ምን ያህል ነበር? በኪ.ግ

8. የእርግዝና ብዛት (ይህን ጨምሮ)

9. በህይወት ያሉ ሕፃናት ቁጥር (ይህን ሳይጨምር)

10. ከዚህ እርግዝና በፊት ለ 20 ሳምንታት ወይም ከዚያ በላይ ምን ያህል ጊዜ አርግዛችኋል?

11. ለቅድመ ወሊድ እንክብካቤ የመጀመሪያ ጉብኝት ከዶክተር ወይም ከተረጋገጠ ነርስ አዋላጅ ለዚህ የአሁኑ/የቅርብ ጊዜ እርግዝና ለመጀመሪያ ጊዜ ሲጎበኙ ስንት ወር ነፍሰ ጡር ነበሩ?

የመጀመሪያ ወር

ሁለተኛ ወር

ሶስተኛ ወር

አራተኛ ወር

አምስተኛ ወር

ስድስተኛው ወር

ሰባተኛው ወር

ስምንተኛው ወይም ዘጠነኛው ወር

ያልታወቀ

የሕክምና እንክብካቤ የለም

12. ለዚህ እርግዝና, የሚመለከታቸውን ሁሉ ያረጋግጡ.

ክብደት መቀነስ

ማቅለሽለሽ እና ማስታወክ

የእርግዝና የስኳር በሽታ

መንትዮች ወይም የበለጠ የሚጠበቁ

የፅንስ እድገት ገደብ

ከፍተኛ የደም ግፊት

ምንም አይተገበርም።

13. ለዚህ እርግዝና የጤና አቅራቢዎን ምን ያህል ጊዜ አይተዋል?

14. ለኤችአይቪ የደም ምርመራ ቀርቦልዎታል?

አዎ

አይ

15. ለማንኛውም ከዚህ ቀደም ለነበሩ እርግዝናዎች፣ እባክዎን የተከሰቱትን ሁሉ ያረጋግጡ

የ GDM ታሪክ

ጨቅላ 5 ፓውንድ፣ 8 አውንስ ወይም ያነሰ

የፕሪኤክላምፕሲያ ታሪክ

ሕፃን በህይወት የተወለደ, ግን ከ 1 ወር በፊት ሞተ

የተወለዱ / የተወለዱ ጉድለቶች

ጨቅላ 9 ኪሎ ግራም ወይም ከዚያ በላይ ሲወለድ

ቅድመ ወሊድ (<37 ሳምንታት)

ቀደምት ጊዜ ማድረስ (ከ37 እስከ < 39 ሳምንታት)

ህጻን ከ 5 ወራት ፒጂ በኋላ ሞተ

የፅንስ መጨንገፍ

ምንም አይተገበርም።

16. የሕክምና ሁኔታዎች / የቅርብ ጊዜ በሽታዎች

17. መድሃኒቶች (የሐኪም ማዘዣ ወይም ያለ ሐኪም ማዘዣ)?

አዎ

አይ

18. አዎ ከሆነ, ምን ዓይነት?

19. በአመጋገብ ላይ ተጽዕኖ የሚያሳድሩ የጥርስ ችግሮች?

አዎ

አይ

20. ከዚህ እርግዝና በፊት ባለው ወር ውስጥ መልቲቪታሚን ስንት ጊዜ ወስደዋል?

በሳምንት ከአንድ ጊዜ ያነሰ

በሳምንት ብዛት (1-7)

በሳምንት 8 ወይም ከዚያ በላይ ጊዜ

ያልታወቀ

21. ባለፈው ወር ማንኛውንም ቪታሚኖች ወይም ማዕድናት ወስደዋል?

አዎ

አይ

ያልታወቀ

22. እርጉዝ ከመሆናችሁ በፊት ባሉት 3 ወራት ውስጥ በአማካይ በቀን ስንት ሲጋራ አጨሱ? (20 ሲጋራዎች = 1 ጥቅል)

አላጨስም

አጨሳለሁ፣ ግን መጠኑ አይታወቅም።

የሲጋራዎች ብዛት በቀን (1 - 96)

በቀን 97 ወይም ከዚያ በላይ ሲጋራዎች

ያልታወቀ ወይም እምቢ አለ።

23. አሁን በአማካይ በቀን ስንት ሲጋራ ታጨሳለህ?

አላጨስም

አጨሳለሁ፣ ግን መጠኑ አይታወቅም።

የሲጋራዎች ብዛት በቀን (1 - 96)

በቀን 97 ወይም ከዚያ በላይ ሲጋራዎች

ያልታወቀ ወይም እምቢ አለ።

24. በቤትዎ ውስጥ የሚኖር ሌላ ሰው በቤት ውስጥ የሚያጨስ አለ?

አዎ

አይ

ያልታወቀ

25. ከመፀነስዎ በፊት ባሉት 3 ወራት ውስጥ በአማካይ በሳምንት ስንት የአልኮል መጠጦች (ቢራ፣ ወይን፣ አረቄ፣ ወይን ማቀዝቀዣዎች) ነበራችሁ?

አልጠጣም።

በየሳምንቱ የመጠጥ ብዛት (1-20)

በሳምንት 21 ወይም ከዚያ በላይ መጠጦች

ጠጥቷል፣ ግን መጠኑ አይታወቅም።

ያልታወቀ ወይም እምቢ አለ።

26. በእርግዝና ወቅት አልኮል?

አዎ

አይ

27. በአሁኑ ጊዜ ነዎት (የሚመለከተውን ሁሉ ያረጋግጡ)?

ማንኛውንም ህገወጥ ንጥረ ነገር መጠቀም

ማንኛውንም የታዘዙ መድሃኒቶች አላግባብ መጠቀም

በማንኛውም መልኩ ማሪዋና መጠቀም

ምንም

28. ተገቢ የአመጋገብ ውሳኔዎችን የማድረግ እና/ወይም ምግብ የማዘጋጀት ችሎታን የሚገድብ ሌላ ማንኛውም የአካል ጉዳት፣ የአዕምሮ ጤና ሁኔታ ወይም የአእምሮ ችግር?

አዎ

አይ

29. በቀን የምግብ ብዛት

30. በቀን የመክሰስ ብዛት

31. ወተት በአንድ ሊትር በቀን

32. የምግብ ፍላጎት

    ጥሩ

    ፍትሃዊ

    ድሆች

33. ልዩ አመጋገብ

    አዎ

    አይ

34. አዎ ከሆነ, ምን ዓይነት?

35. ፈጣን ምግብ በሳምንት

    0

    1

    2

    3

    4

    5 ወይም ከዚያ በላይ

36. የምግብ አለርጂዎች

    አዎ

    አይ

37. አዎ ከሆነ ምን ዓይነት?

38. ፈጣን ምግብ በሳምንት

39. የምግብ አለርጂዎች

አዎ

አይ

40. በየቀኑ ወይም ብዙ ቀናት ይበላሉ?

ወተት

ፖፕ ወይም ሌሎች ጣፋጭ መጠጦች

ጣፋጭ ወይም ጨዋማ መክሰስ

ያልተፈተገ ስንዴ

ፍራፍሬዎች እና አትክልቶች

41. የሚመለከታቸውን ሁሉ ያረጋግጡ

ያልበሰለ ጭማቂ ወይም ወተት

ለስላሳ አይብ

ጥሬ/ያልበሰለ ስጋ፣ አሳ፣ የዶሮ እርባታ ወይም እንቁላል

ጥሬ ቡቃያዎች

የቀዘቀዘ ፓት / ስጋ ይሰራጫል

የምሳ ስጋዎች

የአካባቢ ዓሣ

ምንም አይተገበርም

42. የሚመለከተውን ሁሉ አረጋግጥ

የቬጀቴሪያን አመጋገብ

ዝቅተኛ-ካሎሪ / ክብደት መቀነስ አመጋገብ

ዝቅተኛ-ካርቦሃይድሬት, ከፍተኛ ፕሮቲን አመጋገብ

የቪታሚን / ማዕድን / አዮዲን ማሟያ በየቀኑ

ከዕፅዋት የተቀመሙ መድኃኒቶች/ሻይ

ፍሎራይድ

ምንም አይተገበርም።

ፒሲኤ

ባሪያትሪክ ቀዶ ጥገና

43. በዚህ ጉብኝት ወቅት የMIHP አገልግሎቶችን ለዚህ ደንበኛ ሰጥተሃል?

አዎ

አይ

| Your Name | How many grades of school haveyou completed? | Are you currently?<br>Married Unmarried |
|---|---|---|

**The following question is optional. Your answer will be used for group reporting purposes. If you do not answer, the staff will make a selection for you. This does not affect you receiving WIC benefits.**

| What was the date of your last menstrual period?<br>Month/Day/Year_____ | When is your baby due?<br>Month/Day/Year_____ |
|---|---|

What was your weight just before you became pregnant with this baby? _____ Pounds

1. Number of pregnancies (including this)

   a. Number of live babies (not including thispregnancy)

2. How many times have you been pregnant for 20 weeks or more before this pregnancy?

   None Number of pregnancies Unknown

3. How many months were you pregnant when you had your first visit for prenatal care from a doctor or acertified nurse midwife for this current/most recent pregnancy?

| | |
|---|---|
| First month | Sixth month |
| Second month | Seventh month |
| Third month | Eighth or Ninth month |
| Fourth month | Unknown |
| Fifth month | No Medical Care |

4. For this pregnancy, check all that apply.

Weight loss

Nausea and vomiting

Gestational Diabetes Mellitus

Fetal Growth Restriction

High blood pressure

None applyTwins or more expected

5. How many times have you seen your health provider for this pregnancy?

6. Have you been offered a blood test for HIV?

7. For any **previous** pregnancies, please check all that occurred:

History of GDM

Preterm delivery (< 37 weeks)

Early term delivery (37 to < 39 weeks)

Infant 5 pounds, 8 ounces or less

Infant died after 5 months of PG

Infant born alive, but died before 1 month

Miscarriage

Congenital/birth defects

Infant 9 pounds or more at birth

None applyHistory of Preeclampsia

**MEDICAL INFORMATION**

Medical conditions/recent illnesses**:** The staff will give you a list of medical conditions to review

8.Medications (prescription or non-prescription)?

YES OR NO

9. Any side effects

YES OR NO

10. Dental problems affecting eating

YES OR NO

11. In the month before this pregnancy, how many times did you take a multivitamin?

Less than once per week

8or more times per week

Number of times per week (1-7)

Unknown

12. Have you taken any vitamins or minerals in the past month

13. In the 3 months before you were pregnant, how many cigarettes did you smoke on an average day?(20 cigarettes = 1 pack)

Do not smoke

Smoked, but quantity unknown

Number of Cigarettes per day (1 - 96) _____ 97 or more cigarettes per day

Unknown or refused

14. How many cigarettes do you smoke on an average day now?

Do not smoke Smoked, but quantity unknown

Number of Cigarettes per day (1 - 96) _____ 97 or more cigarettes per day

Unknown or refused

15. Does anyone else living inside your household smoke inside the home?

Yes, someone else smokes inside the home

No, no one else smokes inside the homeUnknown

16. 3 months before you got pregnant, how many alcoholic drinks (beer, wine, liquor, wine coolers)did you have in an average week?

Did not drink Drank, but quantity unknown

Number of drinks per week (1 - 20) _____ 21 or more drinks per week

17. Alcohol during pregnancy?

18. Are you currently (check all that apply)?

Using any illegal substance

Abusing any prescription medicat

Using marijuana in any formnone

Unknown or refused

19. Any other physical disability, mental health condition or intellectual disability limiting ability to makeappropriate feeding decisions and/or prepare food

YES OR NO

20. Number of meals per day

1 2

3 4 5 or more

21. Number of snacks per day

1 2

3 4 5 or more

22. Milk per day

1 2

3 4 5 or more

23. Appetite

Good Fair Poor

24 A special diet

YES OR NO

25. Fast Food per week

1 2

3 4 5 or more

26. Food allergies

YES OR NO

27. Consume every day or most days?

Milk

Pop or other sweetened beverages

Sweets or salty snacks

Whole grains

Fruits and vegetables

28 Check all that apply

Unpasteurized juice or milk

Soft cheese

Raw/undercooked meat, fish, poultry or eggs

Refrigerated pate/meat spreads

Hot dogs/lunchmeats

Local fishRaw sprouts none apply

29. Check all that apply

Vegetarian diet

Vitamin/mineral/Iodine supplement daily

Low calorie/weight loss diets

what kind? _____

Low-carbohydrate, high protein diet

Herbal supplement remedies/teas

Bariatric surgery

Fluoride

PICA

None apply

30. Did you provide MIHP Services for this client during this visit

YES OE NO