

Abstract

Introduction: Maternal dietary diversity is a proxy indicator of maternal nutrient adequacy and improves health outcomes for both mothers and babies. Lack of dietary diversity is a severe problem in the developing world. Good nutrition during pregnancy is a fundamental determinant for growth and development of infants and mothers' nutritional status.

Objective: The aim of this study is to assess dietary diversity and factors affecting it among pregnant women attending Antenatal Care in public health Centers, Addis Ababa.

Method: A facility based cross-sectional study was conducted in randomly selected public health center of Addis Ababa. Data collection was performed using standard questioners for dietary diversity guideline of Minimum Dietary Diversity for Women (MDD-W) of aged 15-49 years. Multivariate logistic regressions were computed to identify factors associated with dietary diversity.

Result: A total of 578 respondents were involved in the study with a response rate of 98.1%. From the 10 food groups the mean and standard deviation for dietary diversity was 5.1 ± 1.5 with a range of 3 to 9 food groups. Majority (n= 570, 98.6%) respondents were consumed starch food groups followed by pulse 509 (88.1%) over the past 24

Keywords: Dietary diversity; pregnant women; Antenatal care

Introduction

Malnutrition is a universal problem that has many forms. It affects most of the world's population at some point in their lifecycle, from infancy to old age. Maternal under nutrition is one of the most important causes of maternal morbidity and mortality particularly in the developing countries that has direct association with fetal nutrition [1, 2]. Both macro and micronutrient deficiencies for pregnant mothers, is a significant public health problem in many developing countries [1]. Multiple micronutrient deficiencies remain a major public health concern in low-income and middle-income countries (LMICs) which is mainly reflected among pregnant women in sub-Saharan Africa [1, 4]. Dietary diversity refers to an increase in the variety of foods across and within food groups capable of ensuring adequate intake of essential nutrients that can promote good health, and physical and mental development [3, 5]. The diet that is sufficiently diverse may reflect nutrient adequacy and the vulnerability is critical in children and pregnant and lactating mothers [3]. Diversified food during pregnancy is the very important since it is known to affect pregnancy and birth Outcomes and as a result, has broad impacts on economic and social development in developing country [4, 5]. Lack of dietary diversity is a severe problem in the developing world particularly to pregnant mothers that is a major predisposing factor for maternal morbidity and mortality [3, 6]. Further, the vulnerability is critical in children and lactating mothers because they require additional energy and nutritious foods for their physiological and mental development [5, 6]. Dietary diversity is usually measured either

by adding the number of foods or, more often, by counting the number of food groups consumed over a reference period suggested that dietary diversity can be used as a proxy measure of food access at household level, while at individual level it is a reflection of dietary quality [5,6]. Similarly, micronutrient remains a major public health concern in developing countries due to intake of monotonous, predominantly starchy based diets that are lacking in diversity [6,7]. Different scientific researchers have demonstrated that adequate nutrient intake during pregnancy has a critical role in fetal development and wellbeing. Satisfactory nutrient intake during pregnancy will be found to reduce the risk for low birth weight by (19%), small-for-gestational-age births by (8%), and preterm birth by 16%, and infant mortality by 15% in those highly adhered to the regimen [8,9,10]. In Africa alone, 20% of women are underweight in relation to dietary diversity 800 pregnant women die every day during pregnancy(5,11). Dietary diversity score

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and early marriage were independent predictors of under nutrition in Africa [5, 11]. By other hand other studies on the dietary intake of pregnant women in Africa showing that dietary diversity status may be complicated by other factors including household socioeconomic status [12, 15]. Despite the enormous progress made in Ethiopia, the issue of food security and poor nutrition among women continues to be the country's main health and development concern. To improve women's nutritional status, the Ethiopian government established the National Nutrition Program and gave priority to interventions like "Promote maternal nutrition," which includes ensuring adequate intake of a variety of foods [8]. Even though the government has tried to put the strategy into practice, micronutrient deficiencies are a frequent cause of pregnancy-related issues. Anemia and multiple micronutrient deficiencies are present in approximately 22% of pregnant women and 17% of women of reproductive age, respectively, which is a sign of a serious public health issue [13, 14]. Additionally, food insecurity, ignorance of nutritious foods, taboos and myths, cultural customs, and gender discrimination are some of the most pervasive factors affecting pregnant women's diets and nutritional status [8, 9, 11, 16, 17, 18]. Although there is a lack of excellent prenatal and perinatal care, it is well known that pregnancy malnutrition is common and that the food in the nation is of poor quality. It is also poorly studied how different diets among pregnant women in Addis Abeba affect pregnancy-related issues [19, 20].

Methods

Study design and study area

Facility based cross sectional study design was conducted in Addis Ababa Public health centers from June 1 -30, 2022.

Study population and study site

All pregnant women who attend ANC at selected public health centers in Addis Ababa were source population and pregnant women who came to ANC follow up clinics of selected public health centers, during the data collection period were study population.

Eligibility criteria

All pregnant women who came to ANC clinics during data collection were included except, mothers who were severely ill and unable to communicate for data collection were excluded.

Sample size determination

The sample size was determined by using single population proportion formula. Assuming 5% marginal error (d), 95% confidence level (alpha = 0.05), and using from previous study done in North East Ethiopia indicated the measurement of dietary diversity among pregnant women was 31.4% (19).

$$n = \frac{(Z_{\alpha/2})^2 P(1 - P)}{d^2}$$
$$n = \frac{(1.96)^2 0.314(1 - 0.314)}{0.05^2}$$
$$n = 357$$

By considering design effect (1.5) and adding 10% nonresponse rate, the final sample size was (n=589).

Statistical analysis

Variable	Category	Frequency	Percent
marital status	Married	488	84.4

women have had emotional support from their parents and 133 (23%) of pregnant women have history of drinking alcohol during pregnancy [Table 2]. Regarding gestational age 275 (47.6%) of them were in 2nd trimester and 182 (31%) were in 3rd trimester pregnancy. Majority 513 (88.8%) of the respondents have no any medical illness while 42 (8%) of them have had gastritis as well as 69 (11.9%) of them have hyperemesis [Table 2].

Dietary Diversity and Pregnancy Outcome

From the 10 food groups that the pregnant women consumed in the past 24 hours, the mean and standard deviation for dietary diversity was 5.1 ± 1.5 with a range of 3 to 9 food groups. Almost all of the respondents 570 (98.6%) were consumed starch food groups followed by pulse 509 (88.1%) and other vitamin A rich fruits and vegetables 319 (55.2%) over the past 24 hours [Table 3].

Based on the dietary diversity score in our study almost half of pregnant women 305 (52.7%) have adequate or have minimum required dietary diversity while the rest 273 (47.23%) have inadequate dietary diversity [Figure 1].

Factors Associated with Dietary Diversity

To identify factors associated with dietary diversity variables that are showed association during bivariate analysis with p value < 0.25 were included in multivariable analysis. Accordingly variables like marital status, educational status, occupation, emotional support, income level, alcohol drink, coffee/tea drink, meal frequency, iron supplementation and nutrition information have showed association during bivariate analysis. Finally during multivariable analysis house hold income status and emotional support have showed significant statistical association with dietary diversity at p value of < 0.05. Accordingly income of \$37.5-65.5 with (AOR=2.1(CI, 1.1, 4.3), income > 3500 birr with (AOR=2.4 (CI, 1.18, 5.13) and presence of emotional support (AOR=1.6 (CI, 1.1, 2.3) [Table 4].

Dietary Diversity

This study tried to assess the dietary diversity among ANC attending pregnant women of Addis Ababa Ethiopia. The finding was 47.23% of pregnant women had consumed less than 4 food groups out of ten groups and thus have low (inadequate) dietary diversity where as 52.77% have had a minimum dietary diversity (adequate dietary diversity), those who consumed 5 or above food groups. The prevalence of adequate diversity 52.77% in our study is lower than the study conducted in Kenya at referral hospital ANC attending mother [7] that have showed above 61% of pregnant women have had consumed six and above food groups or have had adequate dietary diversity. The difference could be due to difference in study area and socio-economic differences. On the other hand our finding (52.77%) is higher than the prevalence of adequate dietary diversity findings from the study conducted in Shashemene 25.4% (8), in Bale 44.8% (9) and in north east

Ethiopia 31.4% (10). The difference could be due to difference in study area, period and socio-economic differences. This study was conducted in capital city of the country thus all study participants were urban dwellers while the study participants in countryside were at both small town and rural dwellers. In this study almost all of the respondents 98.6% were consumed starch food groups followed by pulse 88.4% and dark green 49% over the past 24 hours. There were also similar with the study in Bale showing 87.9% consumed starch food groups followed by 75% legumes and the study in shashemene stated that starch food groups were consumed by 95% of pregnant mother [8, 9]. The reason for similarity of the finding might be indicate the abundant availability of the same food type in Ethiopia.

This study also found 0.5 (similarly of 0.5 (the 0.5 (finding) 2) the reason for similarity of finding was due to the similar diet in the study area. The reason for similarity of finding was due to the similar diet in the study area.

mother who have emotional support from their parents were 1.6 times higher than those without emotional support. This study states that pregnant women whose husbands or parents support them by encouraging and supporting them, by giving priority to them especially during food shortage and sharing their burden at home could make them to have dietary diversity. This study is similar with the study conducted in shashemene [8] showing that pregnant women who have emotional support from their husbands have had 3.49 times higher chance to have adequate dietary diversity compared to their counter parts. Similarly during emotional support there might be discussion with their husbands or spouse on the issue of importance of food diversity to pregnant women that may increase the chance of adequate food diversity consumption.

In conclusion this study revealed that the overall consumption of adequate dietary diversity of the pregnant mothers was found to be 52.7% which is relatively low. Higher household monthly income and emotional support by the husband or parents were positively associated with the adequate dietary diversity level of pregnant women's.

Limitations

This study has some limitations. Food availability in the household might vary with the seasons which affect dietary diversity and the assessment of dietary intake depends on the 24-hour recall method, which may not accurately reflect their past feeding experience. Moreover, the nature of this study was a cross-sectional design, which does not show the cause and effect relationship. In addition, this study might not give the exact figure of the dietary diversity practice due to a recall bias and being self-reported.

Statement of ethics approval

Ethical Approval

This study received ethical clearance from the City Government of Addis Ababa Health Bureau Ethical Clearance Committee on June 1-30, 2022, with Ref. No. A/A/H/1041/338.

Conflicts of interest

Before collecting individual data, participants provided written informed consent after a thorough explanation of the study's purpose and benefits. This research was carried out in the aftermath of the Helsinki Declaration.

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Conflicts of interest

All of the authors have declared that they have no potential conflicts of interest in relation to the research, authorship, and/or publication of this article.

Data availability

On reasonable request, the datasets used and/or analyzed during the study were made available by the corresponding author.

Consent to publish

This manuscript contains unique content.

Neither the article nor any of its essential elements, such as tables and figures, have been or will be published elsewhere.

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All authors conceived the study, the design, field work, data analysis and interpretation, report writing and manuscript preparation.

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References

1. Ali F, Academy HS, Thaver I (2014) Assessment Of Dietary Diversity And Nutritional Status Of Pregnant Women In Assessment Of Dietary Diversity And