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Prevalence and Factors Affecting Dietary Diversity among Pregnant women at Dami Maternal and Child Health Center Hargeis

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A B S T R A C T

A pregnant woman's nutritional state is crucial since a poor diet has an adverse effect on the health of the mother, the fetus, and the unborn child. Despite evidence that maternal nutrition has significant direct and/or indirect effects on all other age cohorts, little is known about the determinants influencing dietary diversity in pregnant women. The study sought to evaluate pregnant women's nutritional health, dietary diversity, and factors affecting the two. Data were collected using researcher administered questionnaires. Data were entered and analyzed using SPSS and summarized using descriptive statistics such as frequencies, correlated and percentages. The average calorie intake was 1909 Kcal±630, which is less than the 2400 Kcal RDA for expectant mothers. According to MUAC cutoffs, 31.7 percent of respondents were malnourished (MUAC <21.0 cm), while 41 percent were normal (MUAC) and positively connected with socioeconomic status (MUAC >21.0 cm). The normal criteria of body mass index of respondents 12% was lower. The age of the mother and the numbers of births were significant predictors of the MUAC of the pregnant women (p=0.001). The findings of the study may be used by Ministry of Public Health and government and other organizations to promote and implement programmers aimed at improving dietary diversity and nutrition status among pregnant women in the County and other counties with similar characteristics

INTRODUCTION

This research on dietary diversity among pregnant women in Hargeisa, Somaliland is highly significant as it sheds light on the factors contributing to inadequate dietary diversity and its impact on maternal and fetal health. By identifying cultural, maternal, and socio-economic factors influencing food choices, this research provides valuable insights for designing targeted interventions and educational programs. The findings can help healthcare providers and policymakers in Hargeisa develop strategies to improve access to nutritional counseling, enhance maternal education, and address socio-economic barriers, ultimately promoting healthier pregnancies and better outcomes for women and their babies.

Background of Study

Dietary diversity refers to the consumption of a broad range of food groups, which is essential for ensuring adequate intake of vital nutrients. Human health greatly depends on both the quantity and quality of food consumed, and the importance of dietary variety has long been acknowledged (Arimond & Ruel, 2004). Inadequate dietary diversity, particularly among pregnant women, poses a significant public health risk. During pregnancy, a diverse and balanced diet is crucial, as nutritional deficiencies can severely impact both maternal and fetal well-being.

Studies have shown that eating a wide range of foods contributes positively to health outcomes (Mpontshane et al., 2008). Dietary diversity serves as a proxy for overall dietary quality and is considered a reliable indicator of nutrient sufficiency (FAO, 2007; Becquey, Capon, & Martin-Prével, 2009). Nutritional status is not only affected by the types of foods consumed, but also by intra-household food distribution, food preparation, and feeding practices, which all influence individual health outcomes (Conceição et al., 2011).

Low dietary diversity is especially prevalent in low-income settings, where diets are often dominated by starchy staples and lack animal-source foods, fruits, and vegetables. Although maternal deaths and disability-adjusted life years (DALYs) associated with malnutrition declined globally between 1990 and 2019, maternal under-nutrition continues to affect 10–19% of women worldwide (Arimond & Ruel, 2004; Becquey, Capon & Martin-Prével, 2009). Sub-Saharan Africa remains particularly burdened, projected to account for around 70% of global maternal deaths in 2020. Inadequate nutrition in pregnancy compromises immune function, increasing susceptibility to infections and inflammatory diseases. Anemia is a notable concern, affecting 36.8% of pregnant and 30.6% of non-pregnant women globally, with wide-reaching consequences for maternal and child health.

Research from Ethiopia, Kenya, Nigeria, Somalia, and South Africa reveals significant deficiencies in micronutrients like iron, iodine, folate, zinc, and vitamin A among pregnant women. A 2021 study in Ethiopia's Gurage Zone found that 75–78.7% of pregnant women experienced inadequate dietary diversity, and 38% were undernourished. In Kenya, 12% of women were reported to be wasted (KNBS & ICF Macro, 2010). Somalia presents an even more critical situation, with only 30.9% of pregnant women achieving a diverse diet, alongside alarmingly high anemia rates—47.4% nationally and 62.6% in

Puntland—and 11.3% underweight prevalence. Iron and iodine deficiencies remain widespread. There is a clear need for urgent measures to improve dietary practices through public awareness, better access to nutritious foods, and comprehensive prenatal care that addresses socio-economic barriers (Mohammed et al., 2023).

LITERATURE REVIEW

Problem Statement

Dietary diversity, which refers to the consumption of a balanced variety of food groups to fulfill nutritional needs, is especially critical during pregnancy. A diverse diet not only supports the mother's health but also plays a vital role in the proper growth and development of the fetus. However, the global consumption of diverse diets remains insufficient, particularly in food groups such as fruits, vegetables, dairy, meat, and fish. This lack of variety can result in the inadequate intake of essential micronutrients like iodine, iron, folate, calcium, and zinc—deficiencies that are associated with about 7% of the global disease burden due to conditions such as maternal anemia, pre-eclampsia, and hemorrhage.

In Somaliland, pregnant women's diets are typically monotonous, leading to poor intake of critical micronutrients such as iron and folic acid. According to the Somaliland Health and Demographic Survey, only 4% of women had taken iron supplements for the recommended 90 days. Additionally, the prevalence of closely spaced births—affecting 37% of pregnancies—and the high percentage (66%) of women aged 15–49 who have never received formal education exacerbate the challenges in achieving adequate dietary diversity.

Despite these concerning trends, there has been no prior research specifically focused on dietary diversity among pregnant women in Somaliland. Therefore, this study aims to explore the underlying causes of limited dietary diversity and identify effective strategies to address the barriers impacting maternal nutrition in this context (Geta et al., 2024).

There is no previous study regarding in dietary diversity among pregnant women in Somaliland.Therefore, this study we need to identify what causes it and how to prevent the factors effecting of dietary diversity among pregnant women.

Objectives of the Study

1. **General Objectives**
   To assess prevalence and factors effecting dietary diversity among pregnant women at Dami and Qalah MCH.
2. **Specific Objective**
   - To determine the prevalence of dietary diversity among pregnant women at Dami and Qalah MCH.
   - To determine the factors effecting of dietary diversity among pregnant women at Dami and Qalah MCH.

Research Questions

1. What is the prevalence of dietary diversity among pregnant women attending Daami MCH?

2. What are the factors that influence dietary diversity among pregnant women at Daami MCH and Qalax MCH?

Scope of Study

Geographical of Study

This study was be conducted in Hargeisa. Hargeisa is the capital city of Somaliland, is a vibrant and culturally rich urban center located in the Horn of Africa. Hargeisa shares borders with two neighboring countries. To the east of the city lies Ethiopia, with which it shares a land border spanning approximately 150 miles and the west, Hargeisa is bordered by Djibouti, a small coastal

Country that provides access to the Gulf of Aden and the Red Sea. This study was cover 8 districts

consists of Hargeisa only 2 district namely Gacan-Libah and Qalah .This district were selected because it have MCHs functioning and promote, protect, and improve the health of mothers, infants, and children, The activities they do this MCHs include prenatal care, immunization, child health check up's, nutrition support..

Time Scope

A MCH – based cross-sectional study was carried out at the Dami Maternal and Qalah Child Health Center Hargeisa, Somaliland April 2024 to July 2024.

Scope Context

The context scope of this study was to examined and understanding how to prevalence and factors effecting the dietary diversity among pregnant women at Dami B MCH and Qalax MCH.

Significance of the Study

This study was on dietary diversity among pregnant women is significant as it directly impacts maternal and fetal health, nutrient adequacy, and prevention of micronutrient deficiencies, birth outcomes, and long-term health implications. This study findings was provide valuable guidelines to government and health associated organizations to develop and make plans, interventions, policies and programs deal with the factors influencing dietary diversity among pregnant women. The role of this study based on raising awareness and attending health centers to inform the public about the level of nutrition and malnutrition in our society to improve health education, community health and maintain of data.

Operational Definitions

1. **Dietary Diversity Dietary:** Dietary diversity refers to the inclusion of a broad range of food items and food groups within an individual's daily intake. This concept involves consuming foods from various categories such as fruits, vegetables, grains, proteins, dairy products, and oils or fats. A well-diversified diet features a mix of textures, colors, flavors, and nutritional components to support overall health.
2. **Socio Economic Status:** Socioeconomic status (SES) is a framework used to assess an individual's or group's standing in society based on a blend of economic and social indicators. These typically include income level, educational background, employment type or occupational rank, and

perceived social position. SES is a key determinant of access to resources and opportunities.

3. **Nutrition Education** Nutrition education is the process of equipping individuals or communities with the knowledge and practical skills needed to make informed dietary decisions. It aims to promote healthier eating behaviors by increasing awareness of nutritional needs and food choices.

METHODOLOGY

Research Design

This study was used cross sectional analytical design since data was collected at a single moment in time. This design is appropriate for examining the relationships between variables such as dietary diversity and factories effecting among pregnancy women. Data was collected, analyzed, and presented using a combination of qualitative and quantitative methodologies.

The study was carried to out at the sheikh Noor MCH in Hargeisa Somaliland country.

The Sheikh Nour MCH was select as the area for the study because of its location in the region. Being the second largest referral sheikh Nour Sheikh Nour MCH Hargeisa Somaliland, it serves a wide population the central and sheikh Nour MCH branch B Hargeisa. The Sheikh Nour MCH has operating room of antenatal care and prenatal care.

The study was focused on pregnancy women who have Promoted to increased dietary diversity among pregnant women is crucial to ensuring they receive a well-rounded intake of essential nutrients necessary to support the health and development of both the mother and the growing fetus during this critical stage of life, attending antenatal care SHNMCH specially dami B in Hargeisa Somaliland.

Inclusion and Exclusion Criteria

1. **Inclusion Criteria**: The study focused on assessing dietary diversity among pregnant women and included participants who were 18 years of age or older and in any trimester of pregnancy. Women from various backgrounds were eligible, particularly those who had experienced the full seasonal food availability cycle in the region, having lived through both the harvest and lean seasons within the county.
2. **Exclusion Criteria:** Participants with pre-existing health conditions or chronic illnesses such as diabetes, hypertension, tuberculosis, or HIV/AIDS—were not included in the study, as these conditions could influence nutritional status and dietary patterns. Additionally, individuals currently participating in nutritional intervention programs (e.g., supplementary feeding or general food distribution) were excluded to avoid bias, as such interventions may alter dietary diversity. Other exclusion factors included women with multiple pregnancies, those experiencing pregnancy-related complications, recent childbirth attended at Sheikh Nour MCH, language barriers that could hinder communication, and participation in other concurrent studies.

Sampling Techniques and Sampling Size

Sheikh Nour Hargeisa Somaliland SHNMCH was purposefully sample because it is well- established maternity institution (Sheikh Nour MCH) the serves a large population in Hargeisa Somaliland. Cluster sampling was utilized to choose the moms to be interviewed. All pregnancy mothers in the randomly selected cluster was collected questioned for participation in the study until the sample size is reached.

The sample size was drawn from the target population, and the ideal sample size of the target population was determined by Slovene's formula.
Population size (N) = 110 Sample size (n) = 1 Possible error (e) = 0.05
Slovene's formula is given by: n = N / (1 + N * e^2)
Let's calculate the sample size:

n = 110 / (1 + 110 * 0.05^2)
n = 110 / (1 + 110 * 0.0025)
n = 110 / (1 + 0.275)
n = 110 / 1.275
n ≈ 86.27

According to Slovene's formula, the calculated sample size is approximately 86.27. However, since the sample size cannot be a fraction or less than 1, we round it up to the nearest whole number.

Therefore, the recommended sample size would be 87 (rounded up from 86.27).

Sampling Procedure

This study was used simple random sampling is a sampling to collected data from pregnancy women randomly available. Simple random sampling is a sample selected from those who available at the time of data collection. Simple random sampling is suitable because it gives every participant a fair chance, this study selected simple random number pregnancy mothers attending in daami MCH.

An individual dietary diversity questionnaire (Appendix VI) recommended by FAO (FAO, 2007) was adopted and modified to collect data on dietary diversity, socio demographic and other factors influencing dietary diversity and nutritional status. The questionnaire was divided into 8 sections: socio-demographic information, 24 hour recall, dietary diversity, micronutrient supplementation, ANC attendance and morbidity, socioeconomic characteristics, cultural beliefs and anthropometry in which MUAC and hemoglobin levels were measured and used to determine the nutritional status of the pregnant women. The socio-demographic data required were: - age, parity, gestation in weeks, marital status, level of education and main occupation of the respondent and the husband if married.

Research Instrument Questionnaire

1. Section A Demographic Information: (age, gestational, highest level of education) Section B Occupation (household income level like: low, middle, high)
2. Section C In the past 24 hours, did you consume any of the following food groups? (Grains, roots, and tubers, legumes and nuts, dairy products, flesh foods, eggs, vitamin A-rich fruits and vegetables,)
3. Section D. Do you take any vitamin or mineral supplements during your pregnancy?
4. Section E what are the main factors that influence your food choices during pregnancy? (Availability, cost, nutrition/health benefits, personal preference, cultural/ traditional beliefs)
5. Section F : Hemoglobin Levels [hemoglobin measurement results, history of anemia or iron deficiency] Hemoglobin measurement results
6. Section G. Anthropometric Measurements :(height, weight, mid -upper arm circumference [MUAC], calculation of body mass index)
7. Section H. Perception of Nutritional Status: (Self-perception of overall health and nutritional status any concerns or challenges related to nutrition during pregnancy)

Validity and Reliability

Reliability and validity are concepts used to evaluate the quality of research. They indicate how well a method, technique or test measure something. Reliability is about the consistency of a measure, and validity is about the accuracy of a measure. It's important to consider reliability and validity when you are creating your research design, planning methods, and writing up results, especially in quantitative research.

Data Gathering Procedure

This study was used questionnaire and documented analyses were the main data collection method. A questionnaire was selected, because the sample is large (respondent) and only questionnaire method was able the researcher to collected sufficient information over a shorter period of time. Document analysis was used to collected dietary diversity and factories affecting among pregnancy women.

Data Gathering Procedure

Quantitively data whose entering in regression SPSS data was cleaned by running frequency all the variables to check with the raw data in the questionnaire and corrected. Statically methods was used to analyze to the data collected as descriptive statics. Example numerical, summarization, graphic and tables. The analyzed software performed using the data was statistical for social science (correlation SPSS).

RESULTS AND DISCUSSION

This part was presented by the study findings as per the objectives as follows: Demographic and socio economic characteristics of the study population comprising pregnant women attending sheikh Nour MCH District Gacan-Libah Dietary diversity of the study population; Nutritional status of

the study population; Factors influencing dietary diversity and nutritional status and relationships between dietary diversity and nutrition status and factors influencing the two. Data was presented in bar charts and tables.

Table 1. Socio - Demographic Characteristics of the Respondents.

Age	Frequency	Percent	Educational level	Frequency	Percent
18-24	27	31	Non formal Education	50	57.5
25-30	35	40.2	Primary Education	25	28.7
31-35	19	21.8	Secondary Education	11	12.6
36	6	6.9	Higher Education	1	1.1
Gestational age	Frequency	Percent	Occupation	Frequency	Percent
Less than 12 weeks	14	16.1	Employed (part time)	15	17.2
12-20	34	39.1	Unemployed	33	37.9
21-30	27	31	Homemaker	39	44.8
31-40	12	13.8			
Marital	Frequency	Percent	Households income level	Frequency	Percent
Married	76	87.4	Low income	57	65.5
Unmarried	2	2.3	Middle Income	23	26.4
Divorced	8	9.2	High income	7	8
Widowed	1	1.1	Total	87	100
Total	87	100			

This table show the majority of respondents age 25-30(40%) When a This table show the majority of respondents age 25-30(40%)

A woman is considered to be in the first, second or third trimester when they are 0-12 weeks, 12- 20 weeks and 31-40 weeks pregnant respectively, the majority of respondents mother gestational 12-20 (39%) while the most of mother is house wife's the frequency 76 (87%)

The respondents were asked the level of education acquired as it may affect their economic status, Majority of the pregnant women had acquired non-formal education the frequency 50 (57%)

The respondents that reported as being housewives were the frequency 39 (44%) The highlights that the majority of households fall into the low-income category, as indicated by the highest. This suggests that a significant proportion of the population has a lower income level the frequency 57 (65%) primary sources.

Dietary Diversity Prevalence Bichat:

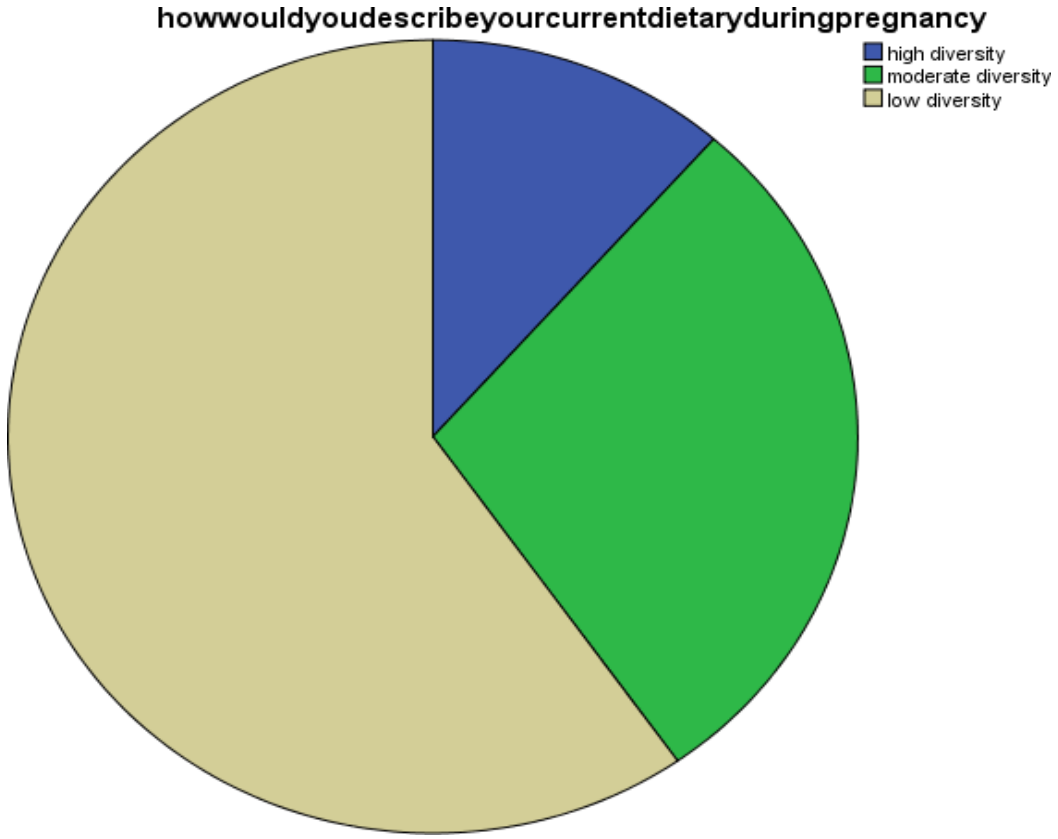

Figure 1. Current Dietary during Pregnancy

The interpreted that your current dietary diversity during pregnancy as "low diversity." This is indicated by the frequency of 52 individuals, which accounts for (59%) of the total. It suggests that the majority of the individuals in the study have a limited variety of food choices in their diet during pregnancy.

Table 2. Prevalence's Table of Respondents

Consumption Food Groups	**Frequency**	**Percent**	**Vitamins Minerals Supplements**	**Frequency**	**Percent**
Garins Roots and Tubers	7	8	Yes take prenatal vitamins	71	81.6
Legumes and Nuts	3	3.4	yes, take specific vitamin or mineral supplements	5	5.7
Dairy Products	2	2.3	do not take any supplements	10	11.5
(Meat,Poultry,Fish)	7	8	Not Applicable	1	1.1
Eggs	14	16.1	Total	87	100
only carbs	54	62.1	**Dietary habits Preference**	**Frequency**	**Percent**
Total	87	100	High diversity	10	11.5
Households income level	**Frequency**	**Percent**	Moderate diversity	25	28.7
low income	57	65.5	Low diversity	52	59.8
middle income	23	26.4	Total	87	100
high income	7	8	**Monthly household income**	**Frequency**	**Percent**
Total	87	100	Less than $100	54	62.1
			$100-$200	21	24.1

Percent (62%) of the study population had consumed carbs in the previous 24 hours which is predominant.

The highlights that the majority of households fall into the low-income category, as indicated by the highest. This suggests that a significant proportion of the population has a lower income level the frequency 57 (65%)

This table shows majority of mother visit of MCH during pregnancy (81%) Taking vitamins and minerals supplements and other (5.7%) take specific vitamins supplements the mother do not take is (11.5%)

This table shows majority of respondent household income less than $100 (62.1%) while $100- 200$ (24.1%) and others 200%-300% (6.9%)

Table 3. Factors Associates' Dietary Diversity

Access Nutritious Food	**Frequency**	**Percent**	**Muac**	**Frequency**	**Percent**
Yes	42	48.3	16-22	33	37.9
No	45	51.7	>22	36	41.4
			<22	18	20.7
Financial Limit Your Ability Diversity Diet	**Frequency**	**Percent**	Total	87	100
Yes	63	72.4	**Body Mass Index**	**Frequency**	**Percent**
No	24	27.6	18-25	28	32.2
Awareness of Benefits Dietary Diversity	**Frequency**	**Percent**	25-30	48	55.2
			Under 18	11	12.6
Yes	49	56.3	Total	87	100
No	36	41.4			
3	1	1.1			
4	1	1.1			
Total	87	100			

Access to Nutritious Food Nearly half of the respondents (48.3%) reported having access to nutritious food, while 51.7% did not. This suggests that a significant portion of the population may face challenges in accessing adequate nutrition.

Financial Limitations A substantial majority (72.4%) reported that financial constraints limit their ability to diversify their diet. This highlights economic challenges as a significant barrier to achieving dietary diversity and potentially optimal nutrition.

Awareness of Benefits of Dietary Diversity a slight majority (56.3%) of respondents were aware of the benefits of dietary diversity. This awareness could influence dietary choices positively and potentially mitigate some health risks associated with poor nutrition.

MAC measurements provide insights into nutritional status. The distribution shows that (37.9%) of respondents had MUAC measurements in the 16-22 cm range, which typically indicates moderate to good nutritional status. However (20.7%) had MUAC measurements below 22 cm, suggesting a portion of respondents may be at risk of malnutrition or under- nutrition.

Body Mass Index (BMI) The distribution of BMI categories shows that (55.2%) of respondents had a BMI between 25 and 30, indicating overweight status, while (32.2%) had a BMI in the 18- 25 range, which is considered healthy. This suggests a prevalent issue with overweight and potentially obesity among the population surveyed.

Table 4. Table of Socio Demographic Respondent and Prevalence's of Dietary Diversity

Category	Dietary Habits Preferences	Low Diversity	Moderate Diversity	High Diversity	Total	P Value
Age	18-24	14	9	4	27	0.7
	25-30	20	6	8	34	
	31-35	13	4	2	19	
	36	4	1	1	6	
Gestational age	< 12 weeks	9	3	2	14	14
	12-20	20	9	5	34	
	21-20	15	5	7	27	
	31-40	7	3	1	11	
Marital status	Married	42	19	14	75	0.1
	Unmarried	2	0	0	2	
	Divorced	6	1	1	8	
	Widowed	1	0	0	1	
Educational	Nonformal	30	9	11	50	0.1
	Primary	14	9	1	24	
	Secondary	6	2	3	11	
	Higher	1	0	0	1	
Occupation	Employed	5	7	3	15	17
	unemployed	25	4	4	33	
	homemaker	21	9	8	38	
Total		51	20	15	86	

This table show the 18-24 most individuals in this age group have low diversity diets (51.9%), followed by moderate diversity (33.3%) and high diversity (14.8%).

25-30 Similar trend as 18-24 age group with a majority in low diversity (58.8%), followed by moderate (17.6%) and high diversity (23.5%).

31-35 predominantly low diversity diets (68.4%), with moderate (21.1%) and high diversity (10.5%) less prevalent.

36+ Over two-thirds have low diversity diets (66.7%), with moderate and high diversity diets each accounting for 16.7%. while gestational age < 12 weeks Majority have low diversity diets (64.3%), followed by moderate (21.4%) and high diversity (14.3%).

12-20 Similar trend with most having low diversity diets (58.8%), followed by moderate (26.5%) and high diversity (14.7%).

21-30 Majority have low diversity diets (55.6%), with moderate (18.5%) and high diversity (25.9%) diets also significant.

31-40 Most have low diversity diets (63.6%), with moderate (27.3%) and high diversity (9.1%) diets less common. Married Majority have low diversity

diets (56.0%), followed by moderate (25.3%) and high diversity (18.7%). Unmarried all respondents (100.0%) have low diversity diets.

Divorced the Majority have low diversity diets (75.0%), with moderate (12.5%) and high diversity (12.5%) less prevalent.

Widowed the All respondents (100.0%) have low diversity diets. And the Educational level Nonformal the Majority have low diversity diets (60.0%), followed by moderate (18.0%) and high diversity (22.0%).

Primary have low diversity diets (58.3%), with moderate (37.5%) and high diversity (4.2%) less common.

Secondary have low diversity diets (54.5%), with moderate (18.2%) and high diversity (27.3%) diets also present. Higher All respondents (100.0%) have low diversity diets, while the occupation Employed Variety in diet preferences with 33.3% having low diversity, (46.7%) moderate diversity, and 20.0% high diversity diets.

Unemployed Majority have low diversity diets (75.8%), with moderate (12.1%) and high diversity (12.1%) less common.

Homemakers have low diversity diets (55.3%), with moderate (23.7%) and high diversity (21.1%) diets also present.

Findings

Age Younger adults (18-24 and 25-30) tend to have higher proportions of moderate and high dietary diversity compared to older age groups (31-35 and 36+), which show higher prevalence of low dietary diversity. While Ethiopian studies often indicate that younger age groups, similar to those aged 18-30 in the current dataset, tend to have diets characterized by lower diversity. This can be attributed to factors such as limited food choices,

Gestational Individuals in early pregnancy stages (< 12 weeks and 12-20 weeks) show more variability in dietary diversity compared to those in later stages (21-30 weeks and 31-40 weeks), where low diversity diets are more predominant. Research in Ethiopia, like the findings for gestational age groups < 12 weeks and 12-20 weeks, suggests that pregnant women often face challenges in achieving dietary diversity

Married individuals exhibit a balanced distribution across low, moderate, and high dietary diversity, whereas unmarried, divorced, and widowed individuals generally have higher proportions of low diversity diets. Ethiopian studies also show that marital status can influence dietary diversity, with married individuals typically having more varied diets compared to unmarried, divorced, or widowed individuals. The married respondents in the exhibit a more balanced distribution across low dietary diversity.

Those with higher educational attainment (Secondary and Higher education) show a trend towards higher dietary diversity, whereas individuals with Nonformal and Primary education levels are more likely to have low dietary diversity. Studies in Ethiopia indicate that higher educational attainment correlates with better dietary diversity, (Secondary and Higher education) show a higher proportion of moderate to high dietary diversity. While nonformal education low dietary diversity

The occupation Employment status shows mixed results with moderate diversity diets being slightly more prevalent among employed individuals. Unemployed individuals tend towards low diversity diets, while homemakers show a relatively balanced distribution across dietary diversity categories. Employment status and occupation can impact dietary diversity in Ethiopia as well.

DISCUSSION

The study aimed to assess dietary diversity and factors affecting it among pregnant women at Sheikh Nour Maternal and Child Health (MCH) Center in Hargeisa, Somaliland. The findings of the study shed light on the socio-demographic characteristics of the respondents, the prevalence of low dietary diversity, and the factors associated with it.

The majority of the respondents were in the age group of 25-30 years, accounting for 40% of the total. This age group had the highest representation among the pregnant women participating in the study. Regarding gestational age, most of the mothers fell into the 12-20 weeks category. This indicates that the study captured a significant proportion of women in the middle stage of pregnancy. Additionally, the majority of the respondents were housewives, comprising 87% of the sample.

Education plays a vital role in influencing dietary choices and economic status. In this study, a considerable number of pregnant women had acquired non-formal education (57%). This suggests that educational opportunities may be limited among the study population. Furthermore, a significant proportion of the respondents reported being housewives (44%), which could potentially impact their economic independence and access to resources. A Studies conducted in Ethiopia have highlighted the importance of education in improving dietary diversity and economic status among pregnant women. Higher levels of education have been associated with better nutritional knowledge, increased awareness of healthy dietary practices, and enhanced economic opportunities (Abebe et al., 2016; Kavle et al., 2017). The study revealed a high prevalence of low dietary diversity among the pregnant women, with 59% falling into this category. This indicates that the majority of the participants had limited variety in their food choices during pregnancy. Carbohydrate consumption was predominant among the study population, with 62% reporting its consumption in the previous 24 hours.

Financial limitations were identified as a major barrier to achieving dietary diversity. Approximately 72% of the respondents reported that financial constraints restricted their ability to diversify their diets. This highlights the impact of economic challenges on pregnant women's access to a diverse range of nutritious foods. In many low- and middle-income countries, including Kenya, similar challenges related to affordability and limited financial resources may restrict, pregnant women's ability to incorporate a diverse range of foods into their diets. Factors such as poverty, unemployment, and high food prices can contribute to financial limitations and hinder the attainment of dietary diversity. Awareness of the benefits of dietary diversity was reported by 56.3%

of the respondents. This indicates that a slight majority of pregnant women were aware of the positive impact diverse diets can have on their health. Promoting education and awareness about the importance of dietary diversity during pregnancy could potentially improve dietary choices and mitigate health risks associated with poor nutrition.

Anthropometric measurements, such as Mid-Upper Arm Circumference (MUAC) and Body Mass Index (BMI), provide insights into the nutritional status of the population. The study found that 37.9% of respondents had MUAC measurements in the 16-22 cm range, indicating moderate to good nutritional status. However, 20.7% had MUAC measurements below 22 cm, suggesting a portion of the respondents may be at risk of malnutrition or under nutrition. The distribution of BMI categories revealed that 55.2% of respondents were overweight, while 32.2% had a healthy BMI. This highlights the prevalence of overweight and potentially obesity among the surveyed population.

CONCLUSIONS

In this study, the prevalence of dietary diversity among pregnant women and its influencing factors were examined. Approximately 59% of the participants fell into the category of low dietary diversity, indicating a substantial proportion of pregnant women with limited variety in their food choices during pregnancy. The findings revealed that socioeconomic status was a significant factor, with 65.5% of participants belonging to low-income households and 71.3% reporting that their socioeconomic status affected their access to diverse and nutritious foods. Seasonal or geographical limitations affected 51.7% of respondents, limiting the availability of diverse food options. Nutritional knowledge gaps were identified in 63.2% of pregnant women, highlighting the need for educational interventions. Cultural and social factors influenced food choices for 65.5% of participants, while 62.1% reported consuming mainly carbohydrates, indicating a lack of dietary variety. Maternal health services played a role, with 81.6% taking prenatal vitamins. Anthropometric measurements revealed that 11% of participants were underweight.

RECOMMENDATIONS

In Hargeisa, the implementation and planning of these recommendations for promoting dietary diversity among pregnant women would involve collaboration among local healthcare providers, nutritionists, public health officials, community organizations, and policymakers.

Recommendations for Promoting Dietary Diversity Among Pregnant Women in Hargeisa Include:

1. **Improving Access to Diverse and Nutritious Foods**: Efforts should be made to ensure that a variety of healthy foods are affordable and accessible to pregnant women in Hargeisa. This can be achieved by supporting local agriculture, establishing farmers' markets, and promoting food diversity within the community.

2. **Enhancing Nutritional Education:** Providing targeted and culturally sensitive nutrition education programs can help pregnant women in Hargeisa make informed choices about their dietary intake. Education initiatives should focus on the importance of diverse and nutritious foods during pregnancy, as well as practical tips for meal planning and preparation.
3. **Promoting Culturally Sensitive Approaches:** Recognizing and respecting cultural influences on food choices is essential. Tailoring nutrition education materials and programs to align with local food traditions and preferences can help promote dietary diversity among pregnant women in Hargeisa.
4. **Encouraging Prenatal Vitamin Supplementation:** Pregnant women in Hargeisa should be encouraged to take prenatal vitamin supplements, as recommended by healthcare providers. Ensuring the availability and affordability of these supplements is important for supporting maternal and fetal health.
5. **Addressing Underweight and Inadequate Dietary Intake:** Individualized counseling and support should be offered to pregnant women in Hargeisa who are underweight or have inadequate dietary intake. Healthcare providers can work closely with these women to develop personalized nutrition plans and provide necessary support.
6. **Fostering Collaboration Between Healthcare Providers and Community Stakeholders**: Collaboration between healthcare providers, community organizations, and other stakeholders is crucial for developing sustainable strategies to promote dietary diversity during pregnancy. By working together, they can identify and address socioeconomic barriers, knowledge gaps, and cultural influences that affect food choices.

Efforts should be made by the government of Somaliland to address these recommendations by implementing policies and initiatives that support access to diverse and nutritious foods, delivering targeted and culturally sensitive nutrition education programs, and ensuring the availability of prenatal supplements. Collaboration between healthcare providers and community stakeholders will help develop sustainable strategies to overcome barriers and promote dietary diversity among pregnant women in Hargeisa.

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