

Dietary practice amongst pregnant women in a Tertiary Hospital, South East Nigeria

Abstract

The nutritional condition of a mother at the time of conception, during pregnancy and breastfeeding plays an important role in determining her health and well-being, as well as that of her newborn.

Objective: This study assessed practice of proper nutrition during pregnancy to ensure a healthier pregnancy journey.

Methodology: This was an observational prospective hospital based study, conducted in Enugu State University Teaching Hospital. Two hundred pregnant women participated in the study. Self-administered questionnaire was used to ascertain information on socio-demographic and reproductive characteristics, dietary practice/knowledge of nutrition required during pregnancy and factors associated with dietary practices. Data collected were analysis with Statistical Package for Social Sciences software (IBM Chicago) version 28. Categorical variables were presented in frequencies and percentages while symmetrical continuous variables were presented using mean and standard deviations with 95% confidence intervals around the point estimates.

Result: The result revealed that, out of the two hundred participants in the study, only 44 (22%) of pregnant women had good dietary practice. Also, mother's educational status, monthly income, marital status and dietary knowledge were significantly association with good dietary practice.

Conclusion and recommendation: The number of participants with good dietary practice from this study is 44(22%). This finding shows that majority of the participants lacked in knowledge of nutritional requirements in pregnancy and this poses a serious threat to pregnant women and their unborn babies. Therefore, advocacy and awareness creation on good nutritional / dietary practice among pregnant women are indicated.

Keywords: dietary practice, pregnant women, Hospital, South-East

Volume 16 Issue 1 - 2025

Nweze Sylvester Onuegbunam, Ezenwaeze Malachy Nwaeze, Mba Sunday Gabriel

Department of Obstetrics and Gynaecology, Enugu State University Teaching Hospital, Enugu, Nigeria

Correspondence: Ezenwaeze Malachy Nwaeze, Department of Obstetrics and Gynaecology, Enugu State University of Science and Technology Teaching Hospital, Enugu, Nigeria, Email malachy.ezenwaeze@esut.edu.ng

Received: December 27, 2024 | **Published:** January 07, 2025

Introduction

The nutritional condition of a mother at the time of conception, during pregnancy and breastfeeding plays an important role in determining her health and well-being, as well as that of her newborn. Poor maternal nutrition during pregnancy were associated with higher risk of having a preterm labour, low birth-weight, intrauterine growth restrictions and threat to mothers wellbeing and survival.^{1,2} Widespread global micronutrient deficiencies (MNDs) and their consequences exist with pregnant women and under 5-year-old children at the highest risk.³⁻⁶ The reproductive period is a critical time for establishing risks of chronic diseases in offspring later in life.⁷ Malnutrition is among the most severe health problems affecting children and their mothers and malnourished mothers face higher risks during pregnancy and childbirth.⁸ Deficiency of nutrients on the other hand increases the risk for intrauterine growth retardation (IUGR) which usually predicts early life growth curves and survival, besides age and sex.⁹ Maternal undernutrition ranges from 10% to 19% in most countries in sub-Saharan Africa, south-central, and south-eastern Asia. Most pregnant women in Nigeria have been shown to consume vegetables but almost half of them still avoid eggs, fish, meat, and chocolate beverage which are high in protein needed by the fetus because of taboos.^{10,11} Malnutrition determines survival, poverty, and development.¹²⁻¹⁴ Malnutrition due to dietary habits is higher during pregnancy than at any other stage of the life cycle.¹³ A pregnant woman's nutritional intake plays a major role in determining fetal health, predisposition to some diseases (more than genetic factors), and influences the fetus for the rest of its life. Hence, high dietary

diversity is important as good sources of nutrients to support proper growth and development.¹⁵

Comprehensive guidelines detailing nutritional needs of women throughout reproduction from preconception through pregnancy and lactation are lacking even in the phase of the guidelines for antenatal care by World Health Organization (WHO).¹⁶

Maternal health is of the utmost importance during pregnancy, not just for the mother but also for the developing fetus. Pregnancy brings significant changes to the body, necessitating increased nutritional support for both the developing fetus and the mother's health.¹⁷

Therefore, it is crucial to enhance education and awareness of proper nutrition during pregnancy to ensure a healthier pregnancy journey for both the mother and the baby. By providing accurate information and guidance, expectant mothers can bridge this knowledge gap and make informed decisions about their diet and supplement choices

Methods

Study design and setting

This was a prospective hospital based study conducted in Enugu State University Teaching Hospital. Enugu State University Teaching Hospital is a tertiary health facility in the capital of Enugu State, South-East Nigeria with different cadres of professionals. It is located in the metropolis of Enugu and serves as a training Centre for undergraduate medical students and postgraduate resident doctors as well as a referral center for secondary health care centers and other

government owned and private Hospitals in Enugu and neighboring States. Its central location and efficient medical services delivery in the hospital made it an institution of choice for many patients in the state and its environs.

Study participants

Participants were pregnant women that attended antenatal care in Enugu State University Teaching Hospital. Daily antenatal care is conducted in the hospital from Monday to Friday and average of 80 clients are attended to daily.

Systematic Sampling method, involving the recruitment of the first and every other 4th woman each day until the 5th antenatal day was employed in selecting the 200 pregnant women involved in the study.

Variables of the study

Dietary practice was the dependent variable while social, demographic, socioeconomic, gravidity and dietary knowledge were the independent variables.

Sample size calculation

The sample size for this study was calculated using single population proportion formula and was calculated relying on the finding of 39.9% as the prevalence of good nutritional practices during pregnancy from previous research in Guto Gida worded.¹⁸

Measurement

a structured self-administered questionnaire was used to ascertain information on socio-demographic and reproductive characteristics, dietary knowledge of nutrition required during pregnancy and factors associated with dietary practices

Pretest was done on 20% (40) of pregnant mothers prior to the actual study period. Cronbach's alpha score of 85 was calculated after pre-testing the questionnaire which confirmed the internal consistency or reliability of the items (questions) on the questionnaire.

Operational definition

Practices: The actions of pregnant women that could affect her meal frequency per day.

Good dietary practices: Pregnant women who scored > 75% (answered 5 questions yes or correctly) of the dietary practice question which were seven in number.

Poor Dietary practices: Pregnant women who scored < 75% (answered 5 questions yes or correctly) of dietary practice question.⁷

Good dietary knowledge: Pregnant women who scored \geq 75% of dietary practice question.

Poor dietary knowledge: Pregnant women who scored < 75% of dietary practice question.¹⁹

Data analysis

Data collected were analysis with Statistical Package for Social Sciences software (IBM Chicago) version 28. Categorical variables were presented in frequencies and percentages while symmetrical continuous variables were presented using mean and standard deviations with 95% confidence intervals around the point estimates. P-value of less than 0.05 was considered statistically significant.

Ethical clearance for the study was obtained from the Ethics Committee of the hospital

Results

Two hundred pregnant women participated in the study with majority (32%) in the age range of 25 to 29 years. The mean age of the respondents was 26.45 years with \pm 4.34 SD. Most of the respondents had secondary level of education (41.5), 95% were married and 32.5% civil servants. Majority of the research participants were Christians (98.5%) who also had up to 2-4 deliveries in the past (67%) (Table 1).

Table 1 Sociodemographic/Obstetric characteristics of the study participants

Variables	Number n=200	Percentage
Age (years)		
<20	20	10
20-24	56	28
25-29	64	32
30-34	44	22
35-39	16	8
Mean age 33.5	SD 4.4	95%CL:33.5,34.7
Marital status		
Married	190	95
Single	8	4
Widowed	2	1
Occupation		
House wife	32	16
Farmer	55	27.5
Business	48	24
Civil servant	65	32.5
Parity		
Primipara (1)	57	28.5
Multipara (2-4)	134	67
Grand multipara (\geq 5)	9	4.5
Religion		
Christian	197	98.5
Muslim	3	1.50%
Educational status		
Primary	51	25.5
Secondary	83	41.5
Tertiary	66	33

Dietary practices result of the research participants showed that 84.5% of the respondents craved for consumption of unusual materials. Lesser number, 38.5% had aversion to some food materials mainly to avoid fetal macrosomia (32.5%). More than half of the respondents (61%) agreed to have consumed more of carbohydrate rich meal basically due to poor income (59%). Majority of the pregnant women also ate only one to two times in a day 109(54.5%) as seen in Table 2 below. In all, only forty-four respondents had good dietary practice compared to one hundred and fifty-six who had poor dietary practice.

Mothers educational status, monthly income, marital status and dietary knowledge were significantly association with good dietary practices. Respondents with secondary and tertiary level of education had better good dietary practice than those with no formal education or primary level of education. The study participants who earned fifty and hundred naira per month had good dietary practice when compared with those who earned less than ten thousand naira and between ten thousand naira and fifty thousand naira ($\chi^2 = 10.26$). Those of them who also had good dietary knowledge were more likely to have good dietary practice and vice versa. Out of forty-four participants who had good dietary practice, forty had good dietary

knowledge while only four participants had poor dietary knowledge. Majority of the participants who had poor dietary practice (156) had poor dietary knowledge (135) (Table 3).

Table 2 Dietary practices of pregnant women

Variable	Category	Frequency n=200	Percentage
Cravings to consume unusual materials	Yes	169	84.5
	No	31	15.5
Aversion to any food or diet in the current pregnancy	Yes	77	38.5
	No	123	61.5
Reason for such aversion	Religion	15	7.5
	Culture	56	28
	Avoid big baby	65	32.5
	Avoid difficult delivery	64	32
Habits of eating more carbohydrate based meals during pregnancy	Yes	78	39
	No	122	61
Reasons for more of carbohydrate based meal	Availability	82	41
	Poor income	118	59
Diet frequency per day	1–2	109	54.5
	3–4	89	44.5
	> 5	2	1
Overall dietary practices	Good	44	22
	Poor	156	78

Table 3 Factors associated with dietary practices of the pregnant women (n = 200)

Variable	Category	Dietary practice		Test stat	P-value
		Good	Poor		
Level of education	No formal education	4	12	$\chi^2 = 10.26$	0.537
	Primary education	15	45		
	Secondary education	58	20		
	Tertiary education	40	6		
Marital status	Married	184	6	$\chi^2 = 0.00$	1
	Single	1	7		
	Widowed	2	0		
Income	< #10,000	1	19	$\chi^2 = 10.26$	0.068
	#10,000-#50,000	60	35		
	#50,000-#100,000	55	11		
	>#100,000	19	1		
Dietary knowledge	Good	40	4	$\chi^2 = 9.34$	0.057
	Poor	21	135		

Discussion

The nutritional condition of a mother at the time of conception, during pregnancy and breastfeeding plays an important role in determining her health and well-being, as well as that of her newborn. Two hundred pregnant women participated in this study that assessed practice and knowledge of awareness of proper nutrition during

pregnancy to ensure a healthier pregnancy journey for both the mother and the baby, amounting to 100% recruitment rate. The study revealed that, out of the two hundred that participated in the study, only 44 (22%) of pregnant women had good dietary practices. This poor dietary practice of 22% was similar to 21.6% noted by Kuche PS²⁰ and 26.9 % by Tolera B,²¹ but lower than 31.4 % by Yoseph in Dale Woreda,²² 33.9% by Daba G in Guto Gida¹⁸ and 31.2% by Yisma.²³ The difference in the finding could be due to variation in environmental factor, cultural differences and sample size used for the study. Mothers educational status, monthly income, marital status and dietary knowledge were significantly association with good dietary practices. In a study conducted in America, similar high mothers education was also found to improve their dietary knowledge and practice compared to low and moderate educational level.²⁴

The impact of high monthly income in busting dietary knowledge and practice as noted was similar with the finding of Yismaw, WS.²³ This may be due to direct effect of increase in health seeking behavior, attendance to antenatal care and compliance to recommended diet which are usually associated with increase in ones income as documented in literature.¹⁹ Good knowledge about nutrients was found to have good correlation with dietary practice and this was also supported by the results of the previous studies.²⁵ In a study done in Lagos, Nigeria to access dietary habits, diversity, and predictors among pregnant women attending primary health care centers for antenatal care, the results showed that only 16.7% of respondents consumed five servings of fruits and vegetables daily while carbohydrate (rice) was the most frequent meal taken (45.4%). Meat was the commonest animal protein (20.3%) and only 30.8% had a high dietary diversity score (DDS). High DDS was significantly associated with parity of 1–3, living in a duplex or detached house, completion of at least secondary school education, and highly skilled professionals.²⁶ The findings were similar to the observation in the present study that found low dietary habits/practice and low dietary diversity (DDS) amongst the pregnant women attending antenatal care in Enugu.

Conclusion and recommendation

The number of participants with good dietary practice from this study is 44(22%). This finding shows that majority of the pregnant women are lacking in the knowledge of nutritional requirements in pregnancy and this poses a serious threat to pregnant women and their unborn babies. Therefore, we recommend advocacy and awareness creation on good nutritional/dietary practices among pregnant women using media, community partnership and fliers

Acknowledgments

None.

Funding

None.

Conflicts of interest

Authors have no competing interests.

References

1. YismawWS, Teklu TS. Nutritional practice of pregnant women in buno bedele zone, ethiopia: a community based cross-sectional study. *Reprod Health*. 2022;19(1):84.
2. Riang'a RM, Broerse J, Nangulu AK. Food beliefs and practices among the Kalenjin pregnant women in rural Uasin Gishu County, Kenya. *J Ethno Biol Ethno Med*. 2017;13(1):29.

3. Abera SF, Kantelhardt EJ, Bezabih AM, et al. What factors are associated with maternal undernutrition in eastern zone of Tigray, Ethiopia? Evidence for nutritional well-being of lactating mothers. *BMC Public Health*. 2020;20:1214.
4. Bailey RL, West KP, Black RE. The epidemiology of global micronutrient deficiencies. *Ann Nutr Metab*. 2015;66 Suppl 2:22–33.
5. CDC. Micronutrient facts | IMMPaCt | CDC. 2015.
6. Horino M, Bahar L, Al-Jadba G, et al. Dietary inadequacy, micronutrient deficiencies, and approaches to preventing poor nutrition in the Gaza Strip. *Food Nutr Bull*. 2020;41(4):503–11.
7. Barker DJ. The developmental origins of adult disease. *J Am Coll Nutr*. 2004;23(6 Suppl):588S–95S.
8. Infant and Young Child Nutrition project literature review prepared for the Message and materials development workshop produced through support provided by the United States Agency for International Development (USAID), Addis Ababa, Ethiopia; 2011.
9. Alisjahbana B, Rivami DS, Octavia L, et al. Intrauterine growth retardation (IUGR) as determinant and environment as modulator of infant mortality and morbidity: The Tanjungsari Cohort Study in Indonesia. *Asia Pac J Clin Nutr*. 2019;28:S17–S31.
10. Adinma J, Umeononihu OS, Umeh MN. Maternal nutrition in Nigeria. *Trop J Obstet Gynaecol*. 2017;34:79–84.
11. Fasola O, Abosede O, Fasola FA. Knowledge, attitude and practice of good nutrition among women of childbearing age in Somolu Local Government, Lagos State. *J Public Health Afr*. 2018;9:793.
12. Nnadi D, Singh S. The prevalence of neural tube defects in North-West Nigeria. *Saudi J Health Sci*. 2016;5:6–10.
13. Kever RT, Martins SD, Lola N, et al. Knowledge and attitude of pregnant Women towards dietary practices in Yerwa Clinic, Maiduguri Metropolitan Council Borno State. *Journal of Research in Nursing and Midwifery*. 2015;4:12–19.
14. Daba G, Beyene F, Fekadu H, et al. Assessment of knowledge of pregnant mothers on maternal nutrition and associated factors in Guto Gida Woreda, East Wollega Zone, Ethiopia. *J Nutr Food Sci*. 2013;3:235.
15. Diop L, Becquey E, Turowska Z, et al. Standard minimum dietary diversity indicators for women or infants and young children are good predictors of adequate micronutrient intakes in 24-59-month-old children and their nonpregnant non-breastfeeding mothers in rural Burkina Faso. *J Nutr*. 2021;151(2):412–422.
16. World Health Organization. WHO antenatal care recommendations for a positive pregnancy experience. Nutritional interventions update: multiple micronutrient supplements during pregnancy. Geneva, Switzerland: World Health Organization; 2020.
17. Qin Y, Xie L. Nutrition and during pregnancy: a vital supplements component in building the health and well-being of both the mother and the developing baby. *Nutrients*. 2023;15:3395.
18. Daba G, Beyene F, Garoma W, et al. Assessment of nutritional practices of pregnant mothers on maternal nutrition and associated factors in Guto Gida Woreda, East Wollega Zone, Ethiopia. *Sci Technol Arts Res J*. 2013;2(3):105–113.
19. Nana A, Zema T. Dietary practices and associated factors during pregnancy in northwestern Ethiopia. *BMC Pregnancy Childbirth*. 2018;18(1):183.
20. Kuche PS, Debebe M. Dietary practice and associated factors among pregnant women in Wando Genet district southern Ethiopia. *J Pharm Sci Innov*. 2015;4(5):270.
21. Tolera B, Mideksa S, Dida N. Assessment of dietary practice and associated factors among pregnant mother in Ambo district, west Shoa, Oromia, Ethiopia, 2018. *Ethiop J Rep/rod Health*. 2018;10(4).
22. Yoseph HH. Prevalence of food aversion, cravings and pica during pregnancy and their association with the nutritional status of pregnant women in Dale woreda, Sidama zone, SNNPR, Ethiopia. *Int J Nutr Metab*. 2014;7(1):1.
23. Yismaw WS, Teklu TS. Nutritional practice of pregnant women in Buno Bedele zone, Ethiopia: a community based cross-sectional study. *Reprod Health*. 2022;19:84.
24. Shehab L. Nutritional awareness of women during pregnancy. *J Am Sci*. 2012;8(7):10.
25. Manaf ZA, Mei LY, Yee NS, et al. Nutritional status and nutritional knowledge of malay pregnant women in selected private hospitals in Klang Valley. *J Sains Kesihatan Malaysia*. 2014;12(2):53.
26. Olatona FA, Olowu OJ, Goodman OO, et al. Dietary habits, diversity, and predictors among pregnant women attending primary health care centers for antenatal care in Lagos, Nigeria. *J Family Med Prim Care*. 2021;10:3076–3083.