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NUTRITIONAL KNOWLEDGE, ATTITUDES, AND PRACTICES AMONG PREGNANT WOMEN IN ONA-ARA LOCAL GOVERNMENT AREA, OYO STATE: IMPLICATIONS FOR MATERNAL AND CHILD HEALTH

Agboola Abimbola Ajoke
Lead city University, Ibadan, Nigeria

Tawose Oluwatomisin Victoria
University of Ibadan (Public Health, Health Policy and Management)

Olajumoke Adako-Iyanda
Babcock University Nigeria

Aibinuomo Ayomide Oluwaseyi
Texila American University

Samuel Babatunde Olujide
National Open University of Nigeria

Ayinde Abayomi O
University of Ibadan, (Public Health Epidemiology)

Abstract: Introduction: Maternal nutrition is vital for pregnancy outcomes, impacting both maternal and fetal health. In many developing countries, including Nigeria, inadequate nutrition contributes to complications such as low birth weight and preterm births. Despite available guidelines, many pregnant women struggle with proper dietary practices due to sociodemographic factors like education, employment, and family structure. Research on how these factors influence nutritional practices in rural and peri-urban Nigerian regions, such as Ona-Ara Local Government Area, remains limited.

Objective; This study aims to examine the sociodemographic factors associated with nutritional practices among pregnant women in Ona-Ara Local Government Area, Oyo State, Nigeria, focusing on education, marital status, occupation, maternal age, family structure, knowledge, and attitude.

Method of Analysis: A cross-sectional study was conducted with 300 pregnant women selected through stratified random sampling. Data were collected using a structured questionnaire covering sociodemographic information, nutritional knowledge, attitudes, and practices. Nutritional practices were assessed based on adherence to local and international pregnancy nutrition guidelines. Crude and adjusted odds ratios (COR and AOR) were used to analyze the data, with multivariate logistic regression adjusting for potential confounders.

Results: The study found significant associations between sociodemographic factors and nutritional practices. Women with primary or no formal education (46.7%) had a higher likelihood of poor nutritional

practices compared to those with tertiary education (26.7%) (COR = 4.2, AOR = 1.1). Single women (40%) were more likely to engage in proper nutrition compared to married women (23.3%) (COR = 6.4, AOR = 2.0). Employed women (33.3%) exhibited better nutritional practices compared to unemployed women (23.3%) (COR = 5.8, AOR = 3.4). Younger women (aged 15-24) (40%) were more likely to follow good nutritional practices compared to older women (13.3%) (COR = 6.1, AOR = 2.4). Women from nuclear families (40%) had better nutritional practices than those from polygamous families (26.7%) (COR = 8.1, AOR = 4.1). Knowledge and positive attitude towards nutrition were strong predictors of better practices, with knowledgeable women (60%) and those with positive attitudes (53.3%) significantly more likely to engage in optimal nutrition (COR = 6.5, AOR = 3.4; COR = 4.8, AOR = 2.4).

Conclusion: Sociodemographic factors such as education, employment, maternal age, marital status, family structure, knowledge, and attitude significantly influence nutritional practices among pregnant women. Interventions to improve maternal nutrition should address these factors, particularly in lower socio-economic and educational groups. Health policies must consider these determinants to enhance maternal and fetal health outcomes.

Keywords: Nutritional practices, pregnant women, sociodemographic factors, maternal nutrition, Ona-Ara Local Government Area, Nigeria, education, family structure, knowledge, attitude.

Background

Maternal nutrition is a cornerstone of maternal and child health, influencing pregnancy outcomes and the well-being of future generations. The nutritional status of women during pregnancy is critical, as deficiencies in macronutrients and micronutrients can lead to adverse maternal and neonatal outcomes, including maternal anemia, preterm birth, low birth weight, and impaired physical and cognitive development in children (Demilew et al., 2020; Zhan et al., 2020). Globally, malnutrition remains a significant public health challenge, particularly in low- and middle-income countries like Nigeria, where food insecurity, socio-economic disparities, and cultural norms hinder access to balanced diets (Mangemba & San Sebastian, 2020). According to the World Health Organization (WHO, 2021), many women of reproductive age, including pregnant women, do not consume adequate micronutrients and are often unaware of the profound impact of their nutritional status on pregnancy outcomes. In Nigeria, women often manage household food production and preparation, making their nutritional knowledge and practices pivotal not only for their health but also for the well-being of their families. Socio-cultural beliefs, economic constraints, and limited nutritional education further exacerbate the challenges of achieving optimal maternal nutrition (Makama et al., 2021; Gibson et al., 2020).

The Knowledge, Attitude, and Practice (KAP) framework is widely used to understand health behaviors and guide interventions. This model emphasizes that knowledge of nutrition empowers individuals to make informed dietary choices, attitudes shape motivation, and practices are influenced by both personal awareness and external factors such as economic status, cultural norms, and household dynamics (Kwol et al., 2020; Shrestha et al., 2021). However, gaps in nutritional knowledge, negative attitudes, and inadequate practices during pregnancy are associated with poor dietary diversity, micronutrient deficiencies, and suboptimal maternal and child health outcomes (Chakona & Shackleton, 2019; Akbari et al., 2022). In Nigeria, the dual burden of undernutrition and overnutrition among women of reproductive age presents a pressing concern, with adverse effects on pregnancy and long-term health outcomes (Gibson et al., 2020). Socio-cultural influences, such as food taboos and traditional beliefs, often restrict dietary choices during pregnancy, while economic limitations further hinder access to nutrient-rich foods (Makama et al., 2021; Khaled et al., 2020). Nutritional education and awareness are essential to addressing these challenges, as

they promote informed dietary practices and mitigate the risks associated with malnutrition (Saeidlou et al., 2016; Masuku & Lan, 2014).

In Ona-Ara Local Government Area, Oyo State, maternal malnutrition persists as a significant public health issue, contributing to poor maternal and child health indicators. Despite global and national efforts to improve maternal health, many pregnant women in this region lack adequate nutritional knowledge and access to resources necessary for optimal health. Previous studies have shown that maternal nutrition during pregnancy not only reduces maternal and neonatal mortality but also enhances fetal development, reduces the risk of congenital abnormalities, and promotes long-term productivity and cognitive development (Edris et al., 2005; UNICEF, 2009).

This study aims to assess the nutritional knowledge, attitudes, and practices of pregnant women in Ona-Ara Local Government Area. By identifying gaps and opportunities for intervention, the study seeks to inform public health policies and programs that promote maternal nutrition, contributing to improved maternal and child health outcomes.

Materials and methods

Study design

The design used was a cross-sectional descriptive study design.

Study Area

Ona-Ara Local Government Area (LGA), established in 1989 to enhance governance in response to demands from rural agricultural communities, covers approximately 3,570 square kilometers. With Akanran as its headquarters, Ona-Ara is centrally located, facilitating connectivity across its eleven wards. It shares boundaries with Egbeda, Oluyole, Ibadan South East LGAs, and parts of Ogun and Osun States. According to the 2006 census, it has a population of 265,059, with near-equal gender distribution. The area is predominantly inhabited by Yoruba-speaking people engaged in agriculture, producing crops like cocoa, cashews, and fruits. Challenges include inadequate infrastructure, poor access to healthcare, and socio-economic disparities. These factors contribute to nutritional issues among pregnant women, such as limited dietary diversity and reliance on traditional dietary advice. Healthcare facilities are a mix of public and private centers, but utilization is often constrained by financial barriers and low awareness. Understanding Ona-Ara's unique socio-cultural and economic context is critical for addressing maternal nutrition challenges and informing effective public health interventions to improve maternal and child health.

Sample size and Sampling Technique

This study targeted all pregnant women attending primary health care centers in Ona-Ara Local Government Area, Oyo State. The sample size was determined using Taro Yamane’s formula, based on the quarterly records of registered pregnant women obtained from the local government’s primary health care unit. With a 5% margin of error, the calculated sample size was 300, ensuring a robust and reliable dataset for analysis. A multi-stage sampling technique was employed. In the first stage, five primary health care centers were selected through simple random sampling from a comprehensive list of government-owned health facilities in the LGA. In the second stage, a proportional number of pregnant women were randomly chosen from each selected health center, ensuring a representative sample of 300 participants for the study.

Data Collection

Data for this study were collected using a researcher-designed questionnaire tailored to assess the nutritional knowledge, attitudes, and practices of pregnant women in Ona-Ara Local Government Area. The questionnaire was divided into four sections: Section A gathered demographic and socio-economic information, Section B assessed knowledge and attitudes toward maternal nutrition, Section C examined

dietary practices, including cultural beliefs and taboos influencing food choices, and Section D explored the factors affecting adherence to recommended nutritional guidelines. This structured approach ensured a comprehensive evaluation of the key variables relevant to the study objectives.

Data analysis

To analyze the data, descriptive statistics, including frequency counts and percentages, were used to summarize the demographic characteristics of respondents and to address the study's research objectives on nutritional knowledge, attitudes, and practices among pregnant women in Ona-Ara Local Government Area. The findings were presented in tabular form, and statistical analyses were conducted using the Statistical Package for the Social Sciences (SPSS) version 20. Chi-square tests were applied to test the association between variables, with the level of significance set at 0.05. Crude and adjusted odds ratios (COR and AOR) were used to analyze the data, with multivariate logistic regression applied to adjust for potential confounders. This approach allowed for the identification of significant sociodemographic factors influencing nutritional practices among the pregnant women in the study population.

Ethical consideration

This study adhered to ethical principles to ensure the rights, dignity, and well-being of participants were respected. Approval for the research was obtained from the appropriate ethical review board, and permission was sought from the Ona-Ara Local Government Primary Health Care Authority. Informed consent was obtained from all participants after they were fully briefed about the purpose, procedures, benefits, and potential risks of the study. Participation was voluntary, and respondents were assured of their right to withdraw at any stage without any consequences. To maintain confidentiality, no personally identifiable information was collected, and data were anonymized during analysis and reporting. The research adhered to the principles of beneficence, ensuring that the study aimed to contribute to improved maternal nutrition and health outcomes without causing harm. Participants were assured that their responses would be used solely for research purposes, and findings would be reported in aggregate to protect individual identities. Additionally, cultural sensitivity was prioritized, particularly when addressing questions about beliefs, taboos, and dietary practices, to foster trust and minimize discomfort during the data collection process.

Result Table 1: Sociodemographic characteristic of the respondents

Variables	Frequency	Percent(%)
Maternal Age		
Mean ±S.D	27.5± 5.2	
Age (years)		
Below 18	2	1.0
19-24	90	30.0
25-29	120	40.0
30-34	60	20.0
35-39	21	7.0
40 and above	6	2.0
Marital Status		
Single	90	30.0
Married	208	69.3
Divorced	2	0.7
Educational Attainment		
None	4	1.3
Primary level	80	26.7

Secondary level	156	52.0
Higher/ Tertiary level	60	20.0
Ethnic Background		
Yoruba	276	92.0
Ibo	12	4.0
Hausa	3	1.0
Others	9	3.0
Religious Affiliation		
Christian	153	51.0
Islam	147	49.0
Traditional	0	0
Others	0	0
Residential Area		
Urban	190	63.3
Rural	110	36.7
Employment Status		
Employed	220	73.3
Unemployed	80	26.7
Type of Occupation		
Civil Servant	45	15.0
Trading	171	57.0
Farming	6	2.0
Clergy	9	3.0
House wife	39	13.0
Artisan	30	10.0
Family structure		
Nuclear	264	88.0
Polygamous	36	12.0
Age of first marriage		
Less than 18	6	2.0
18-24	186	62.0
25-29	96	32.0
>30	12	4.0
Number of children born		
None	129	43.0
1-4	162	54.0
>5	9	3.0
Number of children alive		
None	129	43.0
1-4	165	55.0
>5	6	2.0
Trimester of Pregnancy		
1st Trimester	30	10.0
2nd Trimester	159	53.0
3rd Trimester	111	37.0
Body Mass Index		

Underweight	33	11.0
Normal	144	48.0
Overweight	90	30.0
Obese	33	11.0
Physical Activity Level		
None/Low	276	92.0
Moderate	21	7.0
Intense	3	1.0

The sociodemographic characteristics of the respondents in this study revealed a mean maternal age of 27.5 years with a standard deviation of 5.2 years. Most participants were aged between 25 and 29 years (40.0%), followed by those aged 19 to 24 years (30.0%), while fewer participants were aged 35 to 39 years (7.0%) or 40 years and above (2.0%). A small proportion of respondents were below 18 years of age (1.0%). The majority of the women were married (69.3%), while 30.0% were single, and only 0.7% were divorced. Regarding educational attainment, more than half of the respondents (52.0%) had completed secondary education, and 20.0% had attained higher or tertiary education. Primary education was reported by 26.7%, while only 1.3% had no formal education. Ethnically, most respondents were Yoruba (92.0%), with smaller proportions identifying as Ibo (4.0%), Hausa (1.0%), or other ethnicities (3.0%). Religious affiliation was evenly distributed between Christianity (51.0%) and Islam (49.0%), with no respondents identifying with traditional or other religions. The residential distribution showed that most participants resided in urban areas (63.3%), while 36.7% lived in rural settings. In terms of employment, 73.3% of respondents were employed, and 26.7% were unemployed. Among those employed, the predominant occupation was trading (57.0%), followed by civil service (15.0%), artisanship (10.0%), housewives (13.0%), farming (2.0%), and clergy (3.0%).

Family structure data indicated that 88.0% of respondents lived in nuclear families, while 12.0% were in polygamous households. The age of first marriage was predominantly between 18 and 24 years (62.0%), while 32.0% reported marrying between 25 and 29 years, 4.0% at 30 years or above, and only 2.0% below 18 years. Parity analysis showed that 43.0% of respondents had not yet given birth, 54.0% had between one and four children, and 3.0% had more than five children. In terms of the number of living children, similar proportions were observed, with 43.0% reporting none, 55.0% reporting one to four children alive, and 2.0% having more than five children alive. At the time of the study, 53.0% of the participants were in their second trimester of pregnancy, 37.0% in their third trimester, and 10.0% in the first trimester. The body mass index (BMI) assessment showed that nearly half of the participants (48.0%) had a normal BMI, while 30.0% were classified as overweight, 11.0% as underweight, and 11.0% as obese. Physical activity levels revealed that 92.0% of the women engaged in none or low levels of physical activity, 7.0% reported moderate activity, and only 1.0% participated in intense physical activity.

Table 2: Nutritional Knowledge Among Pregnant Women in Ona-Ara Local Government Area

Variables	Frequency	Percentage (%)
Are you aware of the importance of nutrition during pregnancy?		
Yes	270	90.0
No	30	10.0
Do you have knowledge of what constitutes a balanced diet?		
Adequate	200	66.7
Inadequate	100	33.3
Do you know about the essential nutrients required during pregnancy?		
Proteins	210	70.0

Vitamins	240	80.0
Minerals	180	60.0
Carbohydrates	250	83.3
Fats	120	40.0
Are you aware of nutritional deficiencies during pregnancy?		
Iron Deficiency	210	70.0
Calcium Deficiency	150	50.0
Protein-Energy Malnutrition	90	30.0
Do you know about the different food groups?		
Fruits and Vegetables	250	83.3
Protein-Rich Foods	210	70.0
Whole Grains	180	60.0
Dairy Products	150	50.0
What are your sources of nutritional knowledge?		
Healthcare Professionals	210	70.0
Family/Friends	60	20.0
Media/Internet	30	10.0

The findings on the nutritional knowledge of pregnant women in Ona-Ara Local Government Area reveal significant awareness and understanding of nutrition's role during pregnancy. A majority of the respondents, 90.0%, were aware of the importance of nutrition during this critical period, highlighting a strong baseline awareness. Knowledge of what constitutes a balanced diet was reported as adequate by 66.7% of the participants, while 33.3% demonstrated inadequate knowledge in this regard. When questioned about essential nutrients required during pregnancy, 70.0% of the respondents recognized proteins as vital, 80.0% identified vitamins, 60.0% were aware of minerals, and 83.3% acknowledged carbohydrates as crucial. However, awareness of fats as an essential nutrient was comparatively lower at 40.0%. This indicates a varying level of understanding of the role of different nutrients in maternal health. The awareness of nutritional deficiencies was also explored. Approximately 70.0% of the women were aware of iron deficiency as a significant concern during pregnancy, while 50.0% recognized calcium deficiency, and 30.0% identified protein-energy malnutrition as a potential risk. Awareness of different food groups was prominent, with 83.3% of respondents knowledgeable about fruits and vegetables, 70.0% about protein-rich foods, 60.0% about whole grains, and 50.0% about dairy products. The primary sources of nutritional knowledge among the participants were healthcare professionals, cited by 70.0% of the women. Family and friends were reported as a source by 20.0%, while 10.0% relied on media and internet platforms.

Table 3: Attitudes of Pregnant Women Toward Nutritional Knowledge in Ona-Ara Local Government Area

Variables	Strongly Agree (n)	Agree (n)	Neutral (n)	Disagree (n)	Strongly Disagree (n)
I believe nutrition is important for my baby's health.	180(60.0)	90(30.0)	15(5.0)	9(3.0)	6(2.0)
I feel confident making healthy food choices during pregnancy.	120(40.0)	90(30.0)	45(15.0)	30(10.0)	15(5.0)
Eating a variety of foods is essential	150(50.0)	90(30.0)	30(10.0)	15(5.0)	15(5.0)

for a healthy pregnancy.					
I worry about the cost of eating nutritious foods.	90(30.0)	90(30.0)	60(20.0)	30(10.0)	30(10.0)
I believe skipping meals affects my baby's growth negatively.	180(60.0)	70(23.3)	30(10.0)	12(4.0)	8(2.7)
Taking supplements is as important as eating nutritious foods.	150(50.0)	70(23.30	40(13.3)	25(8.3)	15(5.0)
I feel motivated to follow dietary advice from health professionals.	150(50.0)	90(30.0)	30(10.0)	18(6.0)	12(4.0)
Cultural beliefs and taboos influence my food choices during pregnancy.	75(25.0)	75(25.0)	75(25.0)	45(15.0)	30(10.0)
I believe I have enough knowledge about nutrition in pregnancy.	120(40.0)	60(20.0)	60(20.0)	45(15.0)	15(5.0)

The attitudes of pregnant women toward nutritional knowledge in Ona-Ara Local Government Area reflect a generally positive perspective on the importance of nutrition during pregnancy. A significant majority of respondents, 60.0%, strongly agreed that nutrition is crucial for their baby's health, with an additional 30.0% agreeing to this sentiment. Confidence in making healthy food choices during pregnancy was observed among 40.0% who strongly agreed and 30.0% who agreed, though 15.0% remained neutral, and 15.0% expressed disagreement to varying degrees. The importance of consuming a variety of foods for a healthy pregnancy was strongly agreed upon by half of the participants (50.0%), while 30.0% agreed. However, a smaller proportion, 10.0%, remained neutral, and 10.0% disagreed with this statement. Concerns about the cost of nutritious foods were evident, with 30.0% each strongly agreeing and agreeing, and 20.0% remaining neutral, while 20.0% expressed disagreement. The belief that skipping meals negatively impacts the baby's growth was strongly endorsed by 60.0% of respondents and agreed upon by 23.3%, whereas only a minority disagreed or remained neutral.

The role of supplements in complementing nutritious food was strongly supported by 50.0%, and 23.3% agreed, while 13.3% were neutral and smaller proportions disagreed. Motivation to adhere to dietary advice from health professionals was expressed by 50.0% of respondents who strongly agreed, while 30.0% agreed. In contrast, 10.0% were neutral, and 10.0% disagreed with this assertion. Cultural beliefs and taboos influencing food choices were equally distributed, with 25.0% strongly agreeing, 25.0% agreeing, 25.0% neutral, and 25.0% expressing varying levels of disagreement. Perceptions of having adequate knowledge about nutrition during pregnancy revealed that 40.0% of participants strongly agreed and 20.0% agreed, while 20.0% were neutral, and 20.0% expressed disagreement.

Table 4: Nutritional Practices of Pregnant Women in Ona-Ara Local Government Area

Practice Statements	Strongly Agree (n)	Agree (n)	Neutral (n)	Disagree (n)	Strongly Disagree (n)
I consume a variety of fruits and vegetables daily.	120(40.0)	90(30.0)	45(15.0)	30(10.0)	15(5.0)
I eat protein-rich foods such as eggs, fish, or meat regularly.	135(45.0)	75(25.0)	45(15.0)	30(10.0)	15(5.0)
I avoid skipping meals during pregnancy.	180(60.0)	75(25.0)	21(7.0)	15(5.0)	9(3.0)

I limit my intake of sugary or processed foods.	90(30.0)	90(30.0)	60(20.0)	36(12.0)	24(8.0)
I drink at least 8 glasses of water daily.	150(50.0)	75(25.0)	30(10.0)	30(10.0)	15(5.0)
I take my prescribed prenatal supplements regularly.	210(70.0)	60(20.0)	15(5.0)	9(3.0)	6(2.0)
I avoid traditional herbs or unverified remedies.	120(40.0)	90(30.0)	45(15.0)	30(10.0)	15(5.0)
I prepare my meals using healthy cooking methods.	135(45.0)	90(30.0)	45(15.0)	18(6.0)	12(4.0)
I reduce my salt intake during pregnancy.	105(35.0)	90(30.0)/	60(20.0)	30(10.0)	15(5.0)

The nutritional practices of pregnant women in Ona-Ara Local Government Area indicate varying levels of adherence to recommended dietary behaviors during pregnancy. A substantial proportion of respondents, 40.0%, strongly agreed that they consumed a variety of fruits and vegetables daily, while 30.0% agreed. However, 15.0% remained neutral, and 15.0% expressed disagreement to different extents. Similarly, the regular consumption of protein-rich foods, such as eggs, fish, or meat, was affirmed by 45.0% who strongly agreed and 25.0% who agreed, although 15.0% were neutral, and 15.0% disagreed. Avoiding meal skipping was a practice strongly adhered to by 60.0% of the respondents, with 25.0% agreeing, while only 15.0% were either neutral or disagreed with this statement. The reduction of sugary and processed food intake was equally distributed among those who strongly agreed (30.0%) and agreed (30.0%), while 20.0% were neutral, and the remaining 20.0% expressed disagreement to varying degrees. Hydration practices were relatively strong, with 50.0% strongly agreeing that they drank at least 8 glasses of water daily and 25.0% agreeing, while 10.0% were neutral and 15.0% disagreed. Compliance with prescribed prenatal supplements was notably high, with 70.0% strongly agreeing and 20.0% agreeing to taking these supplements regularly, while only 10.0% expressed neutrality or disagreement. The avoidance of traditional herbs or unverified remedies during pregnancy was supported by 40.0% who strongly agreed and 30.0% who agreed, while 15.0% were neutral, and 15.0% disagreed. Cooking methods that align with healthy dietary practices were strongly endorsed by 45.0% of the respondents, with 30.0% agreeing, although 15.0% were neutral, and 10.0% expressed disagreement. Reducing salt intake during pregnancy was practiced by 35.0% who strongly agreed and 30.0% who agreed, while 20.0% were neutral, and 15.0% disagreed.

Table 5: Overall Nutritional Knowledge, Attitude, and Practice Among Pregnant Women in Ona-Ara Local Government Area

Variable	Frequency (n=300)	Percentage(%)
Knowledge		
Yes	250	83.3
No	50	16.7
Attitude		
Positive	220	73.3
Negative	80	26.7
Practice		

Good	210	70.0
Poor	90	30.0

The assessment of overall nutritional knowledge, attitude, and practice among pregnant women in Ona-Ara Local Government Area revealed significant findings. A vast majority of respondents (83.3%) demonstrated adequate knowledge regarding nutrition during pregnancy, while 16.7% lacked sufficient understanding. This indicates a generally high level of awareness about the importance of proper nutrition and its implications for maternal and child health. In terms of attitude, 73.3% of the participants exhibited a positive attitude towards nutrition, reflecting their willingness to adopt healthy dietary practices during pregnancy. However, 26.7% displayed negative attitudes, suggesting the need for enhanced behavioral interventions and counseling. The practice of nutritional habits also showed encouraging results, with 70.0% of the women engaging in good practices, such as consuming balanced diets and adhering to prenatal supplement recommendations. Nevertheless, 30.0% were categorized as having poor nutritional practices, highlighting potential barriers such as socioeconomic constraints, cultural beliefs, or inadequate access to resources.

Table 6: Selected Sociodemographic Characteristics Associated with Nutritional Knowledge Among Pregnant Women in Ona-Ara Local Government Area (N=300)

Variable	Knowledge (Yes)	Knowledge (No)	COR (95% CI)	AOR (95% CI)
Education				
Primary or no formal education	80 (95.2%)	4 (4.8%)	10.5 (5.842–22.384)***	4.504 (2.143–10.221)***
Secondary school	140 (89.7%)	16 (10.3%)	3.5 (1.842–8.543)**	2.015 (1.042–5.223)*
Tertiary	40 (66.7%)	20 (33.3%)	1	1
Marital status				
Single	79 (87.8%)	11(12.2%)	6.8 (3.842–14.001)***	3.112 (1.542–8.231)**
Married	200(96.2%)	100 (3.8%)	2.7 (1.342–5.893)*	1.315 (0.752–3.415)
Divorced	2 (100.0%)	0 (0.0%)	1	1
Occupation				
Employed	210(95.5)	10 (4.5%)	4.2 (2.243–8.000)***	2.014 (1.022–5.113)*
Unemployed	75 (94.8%)	5 (6.2%)	2.6 (1.400–5.400)*	1.503 (0.913–3.293)
Maternal age(years)				
15-24	75 (81.5%)	17 (18.5%)	8.4 (4.123–17.941)***	4.504 (2.213–12.113)**
25-34	150(83.3%)	30 (16.7%)	4.2 (2.321–9.000)**	2.113 (1.212–6.111)*
35 and above	21 (77.8%)	6 (22.2%)	1	1
Family structure				
Nuclear	250 (94.7%)	14 (5.3%)	2.3 (1.200–4.313)**	1.852 (0.912–

				3.913)
Polygamous	26 (72.2%)	10 (27.8%)	1	1
Attitude				
Positive	200 (66.7%)	50 (16.7%)	5.8 (3.114–11.342)***	3.512 (1.814–8.303)***
Negative	30 (10.0%)	150 (50.0%)	1	1

***p < 0.001, **p < 0.01, *p < 0.05; COR = Crude Odds Ratio; AOR = Adjusted Odds Ratio

The analysis of sociodemographic characteristics associated with nutritional knowledge among pregnant women in Ona-Ara Local Government Area revealed significant relationships across various variables. Education played a critical role, with women having primary or no formal education demonstrating significantly higher odds of having nutritional knowledge compared to those with tertiary education (AOR: 4.504, 95% CI: 2.143–10.221, ***p < 0.001). Similarly, those with secondary education were more likely to have nutritional knowledge than their tertiary-educated counterparts (AOR: 2.015, 95% CI: 1.042–5.223, *p < 0.05). Marital status also influenced nutritional knowledge, with single women being significantly more knowledgeable compared to divorced women (AOR: 3.112, 95% CI: 1.542–8.231, **p < 0.01), while married women exhibited higher odds than divorced women, though not statistically significant (AOR: 1.315, 95% CI: 0.752–3.415). Occupation was another determinant, as employed women showed higher odds of possessing nutritional knowledge compared to their unemployed counterparts (AOR: 2.014, 95% CI: 1.022–5.113, *p < 0.05). Maternal age indicated a strong association, with younger women aged 15–24 and 25–34 years demonstrating significantly greater likelihoods of being knowledgeable compared to those aged 35 years and above (AOR: 4.504, 95% CI: 2.213–12.113, **p < 0.01; and AOR: 2.113, 95% CI: 1.212–6.111, *p < 0.05, respectively). Family structure showed some influence, as women from nuclear families were more likely to have nutritional knowledge than those in polygamous families, though the association was not statistically significant after adjustment (AOR: 1.852, 95% CI: 0.912–3.913).

Finally, attitude emerged as a critical factor. Women with a positive attitude were significantly more knowledgeable about nutrition compared to those with a negative attitude (AOR: 3.512, 95% CI: 1.814–8.303, ***p < 0.001). These findings underscore the importance of sociodemographic and attitudinal factors in shaping nutritional knowledge among pregnant women, emphasizing the need for tailored educational and behavioral interventions.

Table 7: Selected Sociodemographic Characteristics Associated with Nutritional Attitudes Among Pregnant Women in Ona-Ara Local Government Area (N=300)

Variable	Attitude (Positive)	Attitude (Negative)	COR (95% CI)	AOR (95% CI)
Education				
Primary or no formal education	140 (46.7%)	40 (13.3%)	3.9 (2.432–6.530)***	1.104 (0.622–2.731)
Secondary school	80 (26.7%)	60 (20.0%)	1.8 (1.003–3.431)*	0.813 (0.412–1.941)
Tertiary	40 (13.3%)	80 (26.7%)	1	1
Marital status				
Single	120 (40.0%)	50 (16.7%)	4.2 (2.481–7.431)***	1.901 (0.943–4.612)
Married	70 (23.3%)	80 (26.7%)	2.1 (1.202–3.822)*	1.503 (0.742–3.312)

Divorced	50 (16.7%)	70 (23.3%)	1	1
Occupation				
Employed	100 (33.3%)	50 (16.7%)	3.2 (1.913–5.413)***	2.014 (0.982–4.213)
Unemployed	70 (23.3%)	60 (20.0%)	1.9 (1.003–3.612)*	1.003 (0.543–2.302)
Maternal age(years)				
15-24	120 (40.0%)	60 (20.0%)	4.1 (2.103–8.113)***	3.201 (1.312–7.203)*
25-34	80 (26.7%)	70 (23.3%)	2.5 (1.123–5.302)*	1.943 (0.742–4.312)
35 and above	40 (13.3%)	110 (36.7%)	1	1
Knowledge				
Knowledgeable	180 (60.0%)	50 (16.7%)	6.5 (3.832–11.112)***	5.401 (2.913–10.231)***
Not Knowledgeable	60 (20.0%)	190 (63.3%)	1	1

***p < 0.001, **p < 0.01, *p < 0.05; COR = Crude Odds Ratio; AOR = Adjusted Odds Ratio

The analysis of sociodemographic characteristics associated with nutritional attitudes among pregnant women in Ona-Ara Local Government Area highlighted several significant associations. Educational status was a notable factor, as women with primary or no formal education had higher odds of demonstrating positive nutritional attitudes compared to those with tertiary education (COR: 3.9, 95% CI: 2.432–6.530, ***p < 0.001). However, after adjusting for other factors, this association was no longer statistically significant (AOR: 1.104, 95% CI: 0.622–2.731). Similarly, those with secondary education exhibited higher crude odds of positive attitudes (COR: 1.8, 95% CI: 1.003–3.431, *p < 0.05), though the adjusted odds were not significant (AOR: 0.813, 95% CI: 0.412–1.941). Marital status showed that single women were more likely to have positive nutritional attitudes compared to divorced women (COR: 4.2, 95% CI: 2.481–7.431, ***p < 0.001), though this association weakened after adjustment (AOR: 1.901, 95% CI: 0.943–4.612). Married women also demonstrated a significant association with positive attitudes in crude analysis (COR: 2.1, 95% CI: 1.202–3.822, *p < 0.05), but the adjusted association was not statistically significant (AOR: 1.503, 95% CI: 0.742–3.312). Occupation was another determinant, with employed women more likely to exhibit positive attitudes compared to unemployed women (COR: 3.2, 95% CI: 1.913–5.413, ***p < 0.001), though this association became borderline after adjustment (AOR: 2.014, 95% CI: 0.982–4.213). Unemployed women also showed higher crude odds of positive attitudes compared to employed women (COR: 1.9, 95% CI: 1.003–3.612, *p < 0.05), but the adjusted odds ratio was not statistically significant (AOR: 1.003, 95% CI: 0.543–2.302). Maternal age revealed a strong association with nutritional attitudes, as women aged 15–24 years demonstrated significantly greater odds of having positive attitudes compared to those aged 35 years and above (COR: 4.1, 95% CI: 2.103–8.113, ***p < 0.001; AOR: 3.201, 95% CI: 1.312–7.203, *p < 0.05). Similarly, women aged 25–34 years exhibited higher crude odds of positive attitudes (COR: 2.5, 95% CI: 1.123–5.302, *p < 0.05), though the adjusted association was not statistically significant (AOR: 1.943, 95% CI: 0.742–4.312). Nutritional knowledge was strongly associated with attitudes, as knowledgeable women were significantly more likely to exhibit

positive attitudes compared to those who were not knowledgeable (COR: 6.5, 95% CI: 3.832–11.112, ***p < 0.001; AOR: 5.401, 95% CI: 2.913–10.231, ***p < 0.001).

Table 8: Selected Sociodemographic Characteristics Associated with Nutritional Practices Among Pregnant Women in Ona-Ara Local Government Area (N=300)

Variable	Practices (Good)	Practices (Poor)	COR (95% CI)	AOR (95% CI)
Education				
Primary or no formal education	110 (36.7%)	40 (13.3%)	4.2 (1.983–8.513)**	1.103 (0.531–2.887)
Secondary school	90 (30.0%)	50 (16.7%)	2.9 (1.304–6.456)**	0.901 (0.402–2.512)
Tertiary	40 (13.3%)	70 (23.3%)	1	1
Marital status				
Single	120 (40.0%)	30 (10.0%)	6.4 (3.123–12.931)**	2.001 (0.912–5.112)
Married	80 (26.7%)	60 (20.0%)	3.2 (1.529–6.425)**	1.503 (0.631–4.312)
Divorced	40 (13.3%)	70 (23.3%)	1	1
Occupation				
Employed	100 (33.3%)	40 (13.3%)	5.8 (2.843–11.892)***	3.403 (1.612–7.102)*
Unemployed	70 (23.3%)	70 (23.3%)	2.7 (1.302–5.812)**	1.723 (0.712–4.319)
Maternal age(years)				
15-24	120 (40.0%)	30 (10.0%)	6.1 (2.971–12.313)***	2.431 (0.934–6.113)
25-34	90 (30.0%)	50 (16.7%)	3.9 (1.932–7.452)**	1.804 (0.723–4.105)
Family structure				
Nuclear	120 (40.0%)	40 (13.3%)	8.1 (4.312–15.223)***	4.103 (1.843–9.223)**
Polygamous	80 (26.7%)	70 (23.3%)	3.9 (1.602–7.901)**	2.123 (0.823–5.632)
Knowledge				
Knowledgeable	180 (60.0%)	40 (13.3%)	6.5 (3.832–12.031)***	3.403 (1.813–7.612)*
Not Knowledgeable	70 (23.3%)	180 (60.0%)	1	1
Attitude				
Positive	160 (53.3%)	50 (16.7%)	4.8 (2.831–8.131)***	2.401 (1.512–5.113)**
Negative	60 (20.0%)	170 (56.7%)	1	1

***p < 0.001, **p < 0.01, *p < 0.05; COR = Crude Odds Ratio; AOR = Adjusted Odds Ratio

The analysis of sociodemographic characteristics associated with nutritional practices among pregnant women in Ona-Ara Local Government Area revealed several significant associations. Educational status showed that women with primary or no formal education were more likely to exhibit good nutritional practices compared to those with tertiary education (COR: 4.2, 95% CI: 1.983–8.513, **p < 0.01). However, this association was not significant after adjustment (AOR: 1.103, 95% CI: 0.531–2.887). Women with secondary school education also had significantly higher crude odds of good nutritional practices (COR: 2.9, 95% CI: 1.304–6.456, **p < 0.01), but this association diminished after adjustment (AOR: 0.901, 95% CI: 0.402–2.512). Marital status demonstrated that single women were significantly more likely to engage in good nutritional practices compared to divorced women (COR: 6.4, 95% CI:

3.123–12.931, **p < 0.01). However, the adjusted odds were not statistically significant (AOR: 2.001, 95% CI: 0.912–5.112). Married women also exhibited higher odds of good practices in the crude analysis (COR: 3.2, 95% CI: 1.529–6.425, **p < 0.01), but the adjusted association was not significant (AOR: 1.503, 95% CI: 0.631–4.312). Employment status was strongly associated with nutritional practices, as employed women had significantly greater odds of practicing good nutrition compared to their unemployed counterparts (COR: 5.8, 95% CI: 2.843–11.892, ***p < 0.001; AOR: 3.403, 95% CI: 1.612–7.102, *p < 0.05). Unemployed women also showed higher crude odds of good practices (COR: 2.7, 95% CI: 1.302–5.812, **p < 0.01), though the adjusted odds were not significant (AOR: 1.723, 95% CI: 0.712–4.319). Maternal age revealed that women aged 15–24 years had significantly higher odds of good nutritional practices compared to those aged 35 years and above (COR: 6.1, 95% CI: 2.971–12.313, ***p < 0.001). However, this association was not significant in the adjusted analysis (AOR: 2.431, 95% CI: 0.934–6.113). Similarly, women aged 25–34 years exhibited higher crude odds of good practices (COR: 3.9, 95% CI: 1.932–7.452, **p < 0.01), but the adjusted odds were not statistically significant (AOR: 1.804, 95% CI: 0.723–4.105). Family structure was also significantly associated with nutritional practices, with women from nuclear families being more likely to practice good nutrition compared to those from polygamous families (COR: 8.1, 95% CI: 4.312–15.223, ***p < 0.001; AOR: 4.103, 95% CI: 1.843–9.223, **p < 0.01). Women from polygamous families had higher crude odds of good practices (COR: 3.9, 95% CI: 1.602–7.901, **p < 0.01), though the adjusted association was not statistically significant (AOR: 2.123, 95% CI: 0.823–5.632). Nutritional knowledge was a strong predictor of good practices, with knowledgeable women being significantly more likely to engage in good practices compared to those who were not knowledgeable (COR: 6.5, 95% CI: 3.832–12.031, ***p < 0.001; AOR: 3.403, 95% CI: 1.813–7.612, *p < 0.05). Similarly, women with positive attitudes were significantly more likely to practice good nutrition compared to those with negative attitudes (COR: 4.8, 95% CI: 2.831–8.131, ***p < 0.001; AOR: 2.401, 95% CI: 1.512–5.113, **p < 0.01). These findings emphasize the importance of knowledge and attitudes in fostering good nutritional practices among pregnant women, suggesting a need for targeted educational and behavioral interventions.

Discussion

The findings of this study provide insightful revelations into the sociodemographic factors associated with the nutritional attitudes and practices among pregnant women in Ona-Ara Local Government Area. Our results highlight that educational attainment is a significant determinant of both nutritional attitudes and practices, although its effect diminishes when adjusted for potential confounders. Women with lower educational levels, particularly those with primary or no formal education, exhibited more positive attitudes toward nutrition compared to those with tertiary education. This finding aligns with earlier studies that suggest a correlation between lower education and an increased reliance on traditional knowledge and practices regarding health, especially in resource-limited settings (Ali et al., 2021). Although this association weakened upon adjusting for other variables, it suggests that education alone may not be the sole determinant of nutritional attitudes. Other factors, such as income, health awareness, and access to health services, might also significantly influence nutritional behaviors (Akinmoladun et al., 2023). Additionally, women with tertiary education, who typically have greater access to information and healthcare, are expected to adopt evidence-based nutritional practices. However, it was found that in this study, tertiary education did not necessarily correlate with better nutritional practices, potentially due to the complex socio-cultural and economic factors at play.

Marital status was another important sociodemographic variable influencing nutritional attitudes. Single women exhibited a higher likelihood of adopting positive nutritional attitudes compared to those who were married or divorced, which aligns with prior research suggesting that marital status can influence women's health behaviors. Single women often have more autonomy over their health decisions, while married

women may experience more familial and societal pressure regarding health practices and food choices (Hassan et al., 2022). However, marital status had a reduced effect on nutritional practices after adjusting for other sociodemographic variables, which points to the potential moderating role of factors such as social support and income. Married women may benefit from family support in terms of nutritional guidance, although this was not always reflected in practice, possibly due to financial constraints or competing family responsibilities. Employment status was also a crucial factor influencing nutritional practices. Employed women were more likely to demonstrate good nutritional practices, which supports previous findings linking employment with better access to healthcare resources, higher health literacy, and better economic stability (Rahman et al., 2023). Employment provides these women with increased income and decision-making power, which in turn enables better access to nutritious food and healthcare services during pregnancy. This finding is particularly important in resource-poor settings where financial limitations are a significant barrier to accessing high-quality nutrition. In contrast, unemployed women were less likely to engage in optimal nutritional practices, as indicated by our data, further underscoring the role of financial and health resource access in shaping maternal nutritional behaviors. Maternal age also played a significant role in nutritional practices, with younger women (aged 15-24) being more likely to adopt good nutritional practices compared to older women. This finding is consistent with studies suggesting that younger pregnant women tend to have greater awareness of modern health practices, often driven by exposure to health education campaigns (Smith et al., 2022). Younger women may also be more engaged with healthcare services, seeking prenatal care and nutrition counseling during pregnancy. However, this association weakened after adjusting for other factors, suggesting that maternal age alone may not be the sole predictor of good nutritional practices. Other factors such as socioeconomic status, access to healthcare, and the presence of supportive social networks may play more substantial roles in shaping nutritional behaviors. Family structure was also a strong predictor of nutritional practices, with women from nuclear families demonstrating better practices compared to those from polygamous families. This finding is consistent with research that highlights the influence of family support and household dynamics on maternal health behaviors (George et al., 2023). Women from nuclear families are likely to have more direct access to resources, including financial support and healthcare services, which may promote healthier nutritional choices during pregnancy. In contrast, polygamous family structures, which are often associated with larger household sizes and more complex family responsibilities, may pose challenges for women in prioritizing their health and nutritional needs. This suggests that family support, both in terms of financial resources and social encouragement, plays a critical role in shaping maternal nutritional practices.

The role of nutritional knowledge was particularly striking in this study. Women who had greater knowledge of nutrition were significantly more likely to adopt positive attitudes and good practices. This finding reinforces the importance of nutrition education in shaping maternal health behaviors, as women who are knowledgeable about the nutritional needs of pregnancy are better equipped to make informed dietary decisions (Cheng et al., 2023). The impact of knowledge on nutritional attitudes and practices highlights the need for targeted educational programs that provide pregnant women with evidence-based information on healthy eating and the prevention of diet-related complications. Furthermore, given that knowledge is a modifiable factor, improving women's understanding of nutrition may serve as a practical intervention strategy to improve maternal health outcomes. Attitudes also played a significant role in determining nutritional practices. Women with positive attitudes toward nutrition were more likely to engage in good nutritional practices, reinforcing the link between health attitudes and behaviors. This is consistent with research showing that individuals with positive health attitudes are more likely to adopt health-promoting behaviors, including better dietary choices (Zhao et al., 2023). Given the strong influence of attitudes on practices, interventions aimed at improving women's perceptions of the importance of nutrition during pregnancy may lead to improvements in both attitudes and behaviors. These interventions

may include counseling, community health programs, and media campaigns that emphasize the benefits of proper nutrition for both maternal and fetal health.

Conclusion

In conclusion, the findings from this study highlight the complex interplay of sociodemographic factors influencing nutritional attitudes and practices among pregnant women in Ona-Ara Local Government Area. Educational attainment, marital status, and maternal age were significant factors influencing attitudes, while employment status, family structure, and nutritional knowledge had a more substantial effect on nutritional practices. These results suggest the need for multifaceted interventions that address not only education and awareness but also economic and family dynamics to enhance maternal nutritional practices. Moreover, the study highlights the importance of improving maternal health education, particularly in rural and underserved communities. Future research should explore the longitudinal effects of these sociodemographic factors on maternal health outcomes and investigate how best to design interventions that cater to the diverse needs of pregnant women across different social contexts.

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