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Food Pattern and Dietary Habits of Women Traders and its Effect on the Nutritional Well-Being of Their Children (Aged 1-36 Months) in Selected Markets in Ibadan, Oyo State, Nigeria

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Abstract: Introduction: This study investigates the food patterns and dietary habits of female traders and their influence on the nutritional well-being of children aged 1-36 months in selected markets in Ibadan, Oyo State, Nigeria. The demanding nature of trading activities often affects the dietary routines of female traders, potentially impacting the feeding practices and nutritional status of their infants and children.

Objective: The objective of this study is to assess the lifestyle and dietary patterns of female traders and their children and to analyze the factors influencing these patterns. The study aims to provide insights into the nutritional status of children in relation to their mothers' dietary habits and market-related lifestyle.

Method of Data Analysis: Data were collected using a well-structured questionnaire and direct, face-to-face administration. Anthropometric measurements were conducted to assess the nutritional status of children aged 1-36 months. Descriptive statistics and chi-square tests were employed for data analysis using SPSS version 24.0.

Results: The study found diverse dietary patterns among female traders, influenced by socio-economic factors and cultural beliefs. In Bodija market, 55.3% disagreed with long work hours compared to 38.7% in Ogunpa. Also, 3.3% in Bodija agreed on low income versus 14% in Ogunpa. Cultural beliefs affected food choices, with 42% in Bodija and 50.7% in Ogunpa citing influence. Food taboos impacted 51.4% in Ogunpa and 33.3% in Bodija. Normal-weight children prevailed in both markets, with variations in underweight and overweight proportions. Boys showed slightly higher overweight rates. Chi-square tests revealed significant associations between food patterns and wasting (Bodija: $x2 = 34.175$, $p = .000$*) and underweight (Bodija: $x2 = 30.534$, $p = .000$*). In Ogunpa, no significant associations were found for wasting ($p = .576$) or underweight ($p = .988$), suggesting varied influencing factors across markets.

Conclusion: The findings underscore the importance of tailored interventions and nutritional education programs to address specific dietary needs and challenges among market communities. Efforts to enhance maternal literacy and promote healthy eating practices are crucial for improving the nutritional status of children in these settings. Collaboration between government agencies, community organizations, and healthcare providers is essential for implementing effective interventions and promoting overall well-being among market-goers and their children..

Keywords: female traders, dietary habits, nutritional status, children, market communities, maternal literacy, socio-economic factors, Nigeria.

Background to study

The term "working class" is a socioeconomic descriptor referring to individuals engaged in jobs that require skills or physical labor, constituting over 60 percent of the labor force (Balogun and Owoaje, 2017). Traders, as part of this labor force, engage in the buying and selling of commodities, shaping their lifestyles based on their commitment to goods and services and their interactions with customers. The trading lifestyle is characterized by long hours spent in the market.

A significant proportion of traders are women, found in various markets from dawn to dusk, buying and selling goods (Amosun and Akintunde, 2017). The market activities not only influence the dietary choices of these traders but also impact the nutritional well-being of their families. The early wake-up times for market preparation further highlight the potential challenges in maintaining a balanced diet (WHO, 2016).

Food security, defined by the United Nations' Committee on World Food Security, emphasizes access to sufficient, safe, and nutritious food for an active life (FMoH, 2015). Household food security, as outlined by the Food and Agriculture Organization (FAO) of the United Nations, involves year-round access to safe and varied foods to meet the dietary needs of all household members (FAO, IFAD, UNICEF, WFP, and WHO, 2017). Women play a crucial role in ensuring household food and nutrition security.

However, the busy lifestyles of female traders, coupled with income-generating activities and early wake-up times, may limit their time for food preparation. This situation particularly affects the vulnerable group of children in these families, who may adapt to their mothers' dietary lifestyles, relying on market or vendor-sourced meals (Belsky et al., 2010). The market environment, offering a variety of foods, drinks, and snacks, often becomes the primary source of breakfast and lunch for these traders, reflecting a potentially unhealthy dietary pattern (Blau, 1992). The lifestyle choices of female traders, influenced by the demanding market activities, may have implications for the nutritional status of infants and children in their families. Malnutrition could result from the interplay of market activities, dietary choices, and food availability. To assess the growth and nutritional status of children, anthropometric measurements, including length, weight, head circumference, and body mass index (BMI), are considered vital tools (Blau, 2011). Anthropometry, derived from the Greek words "anthropo"

(human) and "metron" (measure), involves precise measurements of various body dimensions (Rao and Singh, 2016). Valid indices of growth status require accurate and precise anthropometric measurements (Seaone and Latham, 2016).

This study aims to investigate the lifestyle and dietary patterns of female traders and their impact on the nutritional status of their children (aged 1-36 months) in two selected markets in Ibadan, Oyo State, using anthropometric measurements. Undernutrition during infancy, often linked to inadequate breastfeeding practices and complementary feeding, is associated with stunting and various non-infectious childhood ailments. Female traders, due to their demanding market schedules, lead dynamic and busy lifestyles that can disrupt their dietary routines. These lifestyle factors may significantly influence their eating habits, potentially affecting the feeding practices and nutritional well-being of their infants. Female traders typically spend extensive hours engaged in market activities, which may hinder their ability to maintain a balanced diet. As infants derive essential nutrients from their mothers, the dietary habits of female traders indirectly shape the growth and nutritional status of their children. Childhood represents a critical period for establishing eating habits, often influenced by globalized food trends. The habitual dietary practices of female traders, including skipping breakfast and relying on a variety of fast foods or market vendors for meals, may have detrimental effects on the nutritional status and growth trajectory of their children.

MATERIALS AND METHOD

The Study Area

Bodija and Ogunpa markets in Ibadan, Oyo State, Nigeria, are selected study areas for investigating the lifestyle and dietary habits of female traders and their impact on the nutritional well-being of children aged 1-36 months.

Chosen for their prominence as major commercial centers, both markets offer diverse goods and attract traders and customers from various backgrounds. The markets' central location ensures accessibility and provides insights into traders' dietary practices and nutritional challenges.

With extensive trading hours, the markets reflect the demanding schedules of traders, potentially influencing their dietary patterns and child feeding practices. As primary sources of food items, including fresh produce and snacks, they are relevant for assessing child nutrition.

By focusing on Bodija and Ogunpa markets, this research aims to explore the dynamic relationship between trading lifestyles, dietary choices, and child nutrition among female traders and their families in Ibadan, Oyo State, Nigeria.

Sample Size and Sampling Technique

The sampling technique for this study was convenience sampling, chosen due to its practicality and feasibility within the dynamic environment of Bodija and Ogunpa markets in Ibadan, Oyo State, Nigeria. Convenience sampling involved selecting participants based on their availability and accessibility to the researcher, making it suitable for engaging with female traders and their children in the bustling market setting.

Given the challenges of accessing a representative sample within the constraints of time and resources, convenience sampling provided an efficient way to gather data from individuals who were readily available and willing to participate during the study period. This approach allowed researchers to collect valuable insights into the lifestyle, dietary patterns, and nutritional status of female traders and their children in the markets.

The sample size was 240, with 120 participants selected from each market, ensuring a sufficient number of observations to analyze the relationships between trading activities, dietary habits, and child nutrition within the context of Bodija and Ogunpa markets.

Study design

For this study on lifestyle and diets of female traders and their children in Bodija and Ogunpa markets, a cross-sectional design was chosen. Data were collected once from traders and their children aged 1-36 months. The design allowed insights into their nutrition and habits.

Data Collection and Management

The study utilized a well-structured questionnaire for data collection, employing direct, face-to-face administration. The questionnaire, aligned with study objectives, encompassed sections on socio-economic characteristics, lifestyle, dietary patterns of female traders, nutritional status (anthropometric measurements) of their children (aged 1-36 months), and factors influencing traders' lifestyles and dietary patterns. Collected data underwent coding and analysis using SPSS version 24.0. Descriptive statistics, including frequency tables, elucidated demographic variables. Hypothesis testing utilized chi-square as the statistical tool at a significance level of 0.05.

Tools for Measurement

Measuring tape, Infant ruler, Weighing scale, Infantometer

Ethical Consideration

Informed consent from participants was obtained, ensuring confidentiality of collected data, and respecting cultural sensitivities during interactions with the community in Bodija and Ogunpa markets. Researchers prioritized the well-being of participants, especially children, and minimized any potential harm or discomfort. The study protocol underwent ethical review and approval to ensure adherence to ethical guidelines and standards.

Results

Table 1: Sociodemographic Characteristics of the respondents

Variable	Bodija Market		Ogunpa market	
	Freq	Percentage	Freq	Percentage
Age(yrs)				
20-30	96	80.0	24	20.0
31-40	24	20.0	96	80.0
Mean ± std.	**30.23±4.736**		**29.84±4.332**	
Marital status				
Single	31	25.8	31	20.7
Married	87	72.5	86	71.3
Separated/Divorced	2	1.7	3	2.5
Widowed	0	0.0	0	0.0
Single	31	25.8	31	20.7
Ethnic group				
Yoruba	108	90.0	103	85.8
Igbo	10	8.0	9	7.5
Hausa	2	2.0	8	6.7
Religion				
Christianity	53	44.2	68	56.7
Islam	59	49.2	51	42.5
Traditional	8	6.7	1	0.8
Educational level				
No formal education	7	5.8	7	5.8
Primary education	12	10.0	16	13.3
Secondary education	56	46.7	72	60.0
Tertiary education	45	37.5	25	20.8

Place of residence				
Urban	72	60.0	96	80.0
Rural	48	40.0	24	20.0
Status of residence				
Owned	44	33.3	40	33.3
Rented	80	66.7	80	66.7
Household size				
1-5	100	83.3	110	91.7
6-10	20	16.7	10	8.3
Spouse occupation				
Civil servant	30	23.3	28	18.7
Artisan	20	13.3	11	7.3
Farmer	50	38.0	65	43.3
Trader	10	12.7	37	24.7
Clergy	8	12.0	9	6.0
Civil servant and Clergy	2	0.7	0	0.0
Monthly household income				
Less than 30,000	32	26.7	16	13.3
30,000 – 60,000	77	64.2	80	66.7
60,001 – 90,000	11	9.2	24	20.0
90,000 – 120,000	0	0.0	0	0.0
Above 120,000	0	0.0	0	0.0
Types of store				
Cemented store/shop	42	35.0	52	43.3
Road side	30	25.0	31	25.8
Open space market	40	33.3	30	25.0
Home	1	0.8	0	0.0
Kiosk	7	5.8	7	5.8
Source of drinking water in the market	12	10.0	18	15.0
Borehole	31	25.8	23	19.2
Pipe borne	70	58.3	80	66.7
Purchased sachet water	7	5.8	3	2.5
Rain water	0	0.0	0	0.0
Pipe borne and purchased sachet water				
Child's age (months)				
1-12	70	58.3	72	60.0
13-24	32	26.7	30	25.0
25-36	18	15.0	18	15.0
Gender of the child				
Boy	69	57.5	71	59.2
Girl	51	42.5	49	40.8

Table 1 shows the socio-demographic characteristics of respondents from Bodija and Ogunpa markets in Ibadan, Oyo State. In Bodija market, 80.0% of respondents were aged between 20 to 30 years, whereas in Ogunpa market, 80.0% fell between 31 to 40 years. Regarding marital status, the majority were married in both markets, with 72.5% in Bodija and 71.3% in Ogunpa. Yoruba ethnicity predominated in both markets, with 90.0% in Bodija and 85.8% in Ogunpa. Christianity and Islam were the primary religions, and secondary education was the most prevalent educational level. Urban residency was more common, with 60.0% in Bodija and 80.0% in Ogunpa, while rented accommodation was the predominant status. Household sizes mainly ranged from 1 to 5 individuals, and traders were the primary spouse occupation. Monthly

household incomes varied, with the majority falling between ₦30,000 to ₦60,000. Cemented stores/shops were the most common type of store, and purchased sachet water was the primary source of drinking water. Regarding children, most were between 1 to 12 months old, and boys slightly outnumbered girls in both markets, with 57.5% boys in Bodija and 59.2% in Ogunpa.

Table 2:Dietary Pattern of Respondents

Variables	Bodija market		Ogunpa market	
	Frequency	Percentage	Frequency	Percentage
Frequency of consumption of food per day				
Once	1	0.8	5	4.2
Twice	54	45.0	17	14.2
Thrice	40	33.3	57	47.5
More than thrice	25	20.8	41	34.2
Skipping of meals				
Yes	69	57.5	66	55.0
No	51	42.5	54	45.0
If yes, meals skipped				
Breakfast only	30	25.0	37	30.8
Lunch only	30	25.0	15	12.5
Dinner only	0	0.0	2	1.7
Breakfast and lunch only	5	4.2	4	3.3
Breakfast and dinner only	4	3.3	8	6.7
Reasons for skipping meals				
Lack of time to cook or eat	30	25.0	27	22.5
No appetite	13	10.8	6	5.0
Reduce weight	6	5.0	4	3.3
Lack of money/food	18	15.0	17	14.2
Very tired to cook or eat	0	0.0	2	1.7
I prefer to eat at the market	2	1.7	10	8.3
Types of snacks/food consumed in the market				
Biscuits/cakes/meat pie/puff-puff/chin-chin	10	8.3	35	29.2
Bread and moinmoin/akara	5	4.2	8	6.7
Groundnut and gari	4	3.3	14	11.7
Fruits	2	1.7	6	5.0
Bread and minerals	21	17.5	31	25.8
Solid foods	12	10.0	29	24.2
Biscuits/cakes/meat pie/puff-puff/chin-chin; bread and minerals and solid food	8	6.7	3	2.5
Biscuits/cakes/meat pie/puff-puff/chin-chin; fruits and solid food	19	15.8	6	5.0
Biscuits/cakes/meat pie/puff-puff/chin-chin, groundnut and gari, fruits; and bread and minerals	22	18.3	3	2.5
Biscuits/cakes/meat pie/puff-puff/chin-chin; bread and minerals	3	2.5	2	1.7
Groundnut and gari, bread and minerals	8	6.7	2	1.7
Bread and moinmoin/akara; groundnut and gari; bread and minerals	7	5.8	1	0.8

Biscuits/cakes/meat pie/puff-puff, chin-chin, fruits, bread and minerals, solid food	12	10.0	4	3.3
Biscuits/cakes/meat pie/puff-puff/chin-chin, bread and moinmoin/akara, fruits and solid food	5	4.2	1	0.8
Biscuits/cakes/meat pie/puff-puff/chin-chin, groundnut and gari, fruits and solid food	10	8.3	4	3.3
Biscuits/cakes/meat pie/puff-puff/chin-chin and fruits	2	1.7	1	0.8

Table 2 illustrates the The dietary patterns of respondents varied between Bodija and Ogunpa markets. In terms of the frequency of food consumption per day, Ogunpa market had a higher percentage of respondents (47.5%) consuming food thrice daily compared to Bodija market (33.3%). Additionally, a higher proportion of respondents in Bodija market (57.5%) reported skipping meals compared to those in Ogunpa market (55.0%). Among those who skipped meals, a greater percentage in Bodija market cited lack of time to cook or eat (25.0%) as the reason, while in Ogunpa market, a higher percentage mentioned preference for eating at the market (8.3%). Regarding types of snacks or food consumed in the market, a larger percentage of respondents in Ogunpa market consumed biscuits/cakes/meat pie/puff-puff/chin-chin (29.2%) compared to those in Bodija market (8.3%). Conversely, Bodija market had a higher percentage of respondents consuming groundnut and gari (10.0%) compared to Ogunpa market (11.7%). These variations suggest distinct dietary behaviors and preferences among respondents in the two markets.

Table 3: Pattern of Food consumption pattern by the respondents

Food items	Bodija market					Ogunpa market				
	Daily	3-4 times per week	1-2 times per week	Occasionally	Never	Daily	3-4 times per week	1-2 times per week	Occasionally	Never
Legumes	3(2.0)	12(15.3)	100(79.3)	3(2.0)	2(1.3)	4(2.7)	20(16.7)	61(47.3)	20(20.0)	15(13.3)
Vegetables	3(2.0)	44(39.3)	68(55.3)	4(2.7)	1(0.7)	17(18.0)	47(38.0)	50(40.0)	2(1.3)	4(2.7)
Cereals	4(2.7)	57(48.0)	55(46.7)	3(2.0)	1(0.7)	10(10.0)	45(40.0)	61(47.3)	3(2.0)	1(0.7)
Roots and tubers	3(2.0)	73(48.7)	69(46.0)	5(3.3)	0(0.0)	6(4.0)	40(33.3)	65(50.0)	9(12.7)	0(0.0)
Fruits	19(19.3)	52(41.3)	43(35.3)	6(4.0)	0(0.0)	40(33.3)	32(28.0)	37(31.3)	9(6.0)	2(1.3)
Beverages	11(7.3)	23(22.0)	80(66.7)	6(4.0)	0(0.0)	38(32.0)	20(20.0)	51(40.7)	8(5.3)	3(2.0)
Snacks	74(56.0)	27(24.7)	18(18.7)	1(0.7)	0(0.0)	71(54.0)	30(26.7)	15(16.7)	4(2.7)	0(0.0)
Milk and Meat products	4(9.3)	24(22.7)	89(66.0)	3(2.0)	0(0.0)	33(28.7)	34(29.3)	46(37.3)	6(4.0)	1(0.7)

Table 3 illustrates the pattern of food consumption among respondents in Bodija and Ogunpa markets. In Bodija market, legumes were consumed daily by 2.0% of respondents, while 15.3% consumed them 3-4 times per week, and 79.3% consumed them 1-2 times per week, with 2.0% consuming occasionally and 1.3% never. Similarly, in Ogunpa market, 2.0% consumed legumes daily, 16.7% 3-4 times per week, 47.3% 1-2 times per week, 20.0% occasionally, and 13.3% never.

For vegetables, 2.0% of respondents in Bodija consumed them daily, 39.3% 3-4 times per week, 55.3% 1-2 times per week, 2.7% occasionally, and 0.7% never. In Ogunpa market, 18.0% consumed vegetables daily, 38.0% 3-4 times per week, 40.0% 1-2 times per week, 1.3% occasionally, and 2.7% never. Regarding cereals, 2.7% of respondents in Bodija consumed them daily, 48.0% 3-4 times per week, 46.7% 1-2 times per week, 2.0% occasionally, and 0.7% never. In Ogunpa market, 10.0% consumed cereals daily, 40.0% 3-4 times per week, 47.3% 1-2 times per week, 2.0% occasionally, and 0.7% never. Roots and tubers were consumed daily by 2.0% of respondents in Bodija, 48.7% 3-4 times per week, 46.0% 1-2 times per week, and occasionally

by 3.3%, with none never. In Ogunpa market, 4.0% consumed them daily, 33.3% 3-4 times per week, 50.0% 1-2 times per week, 12.7% occasionally, and none never.

For fruits, 19.3% of respondents in Bodija consumed them daily, 41.3% 3-4 times per week, 35.3% 1-2 times per week, 4.0% occasionally, and none never. In Ogunpa market, 33.3% consumed fruits daily, 28.0% 3-4 times per week, 31.3% 1-2 times per week, 6.0% occasionally, and 1.3% never.

Beverages were consumed daily by 7.3% of respondents in Bodija, 22.0% 3-4 times per week, 66.7% 1-2 times per week, 4.0% occasionally, and none never. In Ogunpa market, 32.0% consumed them daily, 20.0% 3-4 times per week, 40.7% 1-2 times per week, 5.3% occasionally, and 2.0% never.

Snacks were consumed daily by 56.0% of respondents in Bodija, 24.7% 3-4 times per week, 18.7% 1-2 times per week, and by 0.7% occasionally, with none never. In Ogunpa market, 54.0% consumed snacks daily, 26.7% 3-4 times per week, 16.7% 1-2 times per week, 2.7% occasionally, and none never. Milk and meat products were consumed daily by 9.3% of respondents in Bodija, 22.7% 3-4 times per week, 66.0% 1-2 times per week, 2.0% occasionally, and none never. In Ogunpa market, 28.7% consumed them daily, 29.3% 3-4 times per week, 37.3% 1-2 times per week, 4.0% occasionally, and 0.7% never.

Table 4; Anthropometric profile of the respondents' Children

Variables	Bodija market		Ogunpa market	
	Frequency	**Percentage**	**Frequency**	**Percentage**
Weight (kg)				
1.00 – 5.00	3	2.5	1	0.8
5.01 – 10.00	84	70.0	93	77.5
10.01 – 20.00	33	27.5	526	21.7
Mean ± std.	**9.8±2.462**		**9.9±2.189**	
Height (cm)				
40 – 60	7	5.8	6	5.0
61– 80	72	60.0	80	66.7
81– 100	41	34.2	33	27.5
Above 100	0	0.0		
Mean ± std.	**76.8±9.966**		**76.4±8.735**	
Nutritional status (Wasting weight for height WHZ)				
Severe Acute Malnutrition (<-3)	5	4.2	0	0.0
Moderate Acute Malnutrition (≥-3 to < -2)	1	0.8	4	3.3
Normal (≥-2 to ≤ +2)	111	92.5	114	95.0
Overweight (>+2 to ≤+3)	3	2.5	1	0.8
Obesity (> +3)	0	0.0	1	0.8
Nutritional status (Underweight weight for age WAZ)				
Severely underweight (<-3)	5	4.2	1	0.8
Moderate underweight (≥-3 to < -2)	4	3.3	0	0.0
Normal (≥-2 to ≤ +2)	111	96.0	116	96.7
Overweight (>+2 to ≤+3)	0	0.0	1	0.8
Nutritional status (Stunting height for age HAZ)				

Severe stunting (<-3)	4	3.3	2	1.7
Moderate stunting (≥-3 to < -2)	4	3.3	11	9.2
Normal (≥-2 to ≤ +2)	112	93.3	107	89.2
Over stunting >+2	0	0.0	0	0.0

Table 4 presents the anthropometric profiles of children from both Bodija and Ogunpa markets, detailing their weight, height, and nutritional status. In terms of weight, the majority of children in both markets fell within the 5.01 - 10.00 kg range, with 84 children (70.0%) in Bodija and 93 children (77.5%) in Ogunpa falling within this category. The mean weight in Bodija was 9.8 kg with a standard deviation of 2.462, while in Ogunpa, it was 9.9 kg with a standard deviation of 2.189.

Regarding height, the most common range for children in both markets was 61-80 cm, with 72 children (60.0%) in Bodija and 80 children (66.7%) in Ogunpa falling within this range. The mean height in Bodija was 76.8 cm with a standard deviation of 9.966, while in Ogunpa, it was 76.4 cm with a standard deviation of 8.735.

In terms of nutritional status, the majority of children in both markets exhibited normal weight for height (WHZ) and weight for age (WAZ), as well as normal height for age (HAZ). However, a small percentage of children in both markets showed signs of acute malnutrition and stunting, albeit at varying levels.

Table 5: Factors influencing the dietary pattern of the Respondents

Variable	Bodija market					Ogunpa market				
	SA f(%)	A f(%)	N f(%)	SD f(%)	D f(%)	SA f(%)	A f(%)	N f(%)	SD f(%)	D f(%)
Nature of work	5(3.3)	2(1.3)	2(1.3)	67(55.3)	43(38.7)	18(18.7)	11(14.0)	0(0.0)	78(58.6)	13(8.7)
Hours spent in the market	7(4.7)	1(0.7)	1(0.7)	57(47.3)	55(46.7)	21(20.7)	20(16.7)	2(1.3)	63(48.6)	14(12.7)
Low income	5(3.3)	1(0.7)	0(0.0)	46(37.3)	68(58.7)	11(14.0)	5(3.3)	14(9.3)	49(39.3)	41(34.0)
Food taboos	9(6.0)	12(8.0)	2(1.3)	57(51.4)	40(33.3)	29(26.0)	13(8.7)	13(8.7)	57(44.7)	8(12.0)
Educational level	5(10.0)	7(4.7)	0(0.0)	49(39.3)	59(46.0)	28(18.7)	26(24.0)	4(2.7)	51(40.7)	11(14.0)
Cultural beliefs	5(3.3)	6(4.0)	0(0.0)	63(42.0)	56(50.7)	45(36.7)	23(15.3)	2(1.3)	35(30.0)	15(16.7)

SA; Strongly Agree, A; Agree, N: Neutral, SD; Strongly disagree, D; Disagree

Table 5 offers a comprehensive comparison of diverse factors influencing the lifestyle and dietary patterns of respondents across the Bodija and Ogunpa markets. These factors encompass the nature of work, hours allocated to market activities, perceived income levels, adherence to food taboos, educational backgrounds, and cultural beliefs.

In the Bodija market, a significant proportion of respondents (55.3%) strongly agreed with spending extensive hours in the market, while in the Ogunpa market, a slightly higher percentage (55.7%) held the same perception. This suggests a common trend of considerable time investment in market-related engagements across both markets. Regarding income perceptions, a substantial portion of respondents in both markets perceived their income as low. However, there was a notable difference in perceptions, with a higher percentage of respondents in the Ogunpa market (58.7%) perceiving their income as inadequate compared to those in the Bodija market (37.3%).

Food taboos emerged as a noteworthy influencer, with a considerable percentage of respondents in both markets expressing agreement with the existence of food-related restrictions. In Bodija, 6.0% strongly agreed with food taboos, while in Ogunpa, 8.0% expressed strong agreement, indicating the cultural significance of dietary norms in shaping food choices.

Educational attainment also played a role in shaping perceptions related to lifestyle and dietary patterns. Respondents with higher educational levels tended to disagree or strongly disagree with certain statements more frequently than those with lower educational backgrounds, underscoring the influence of education on lifestyle choices. Cultural beliefs were also influential, with respondents in both markets expressing varying degrees of agreement or disagreement regarding cultural influences on lifestyle and dietary behaviors.

Table 6; Association between child's gender and nutritional status (underweight WAZ score)

Bodija market					
Child's gender	**Underweight (WAZ)**				**Total**
	Severely underweight<-3SD	**Moderate underweight≥-3SD to <-2SD**	**Normal ≥-2SD to ≤+2SD**	**Overweight >+2 to ≤+3SD**	
Boy	4(2.7)	2(1.3)	56(47.3)	0(0.0)	62
Girl	1(0.7)	2(1.3)	52(44.7)	3(2.0)	58
Ogunpa market					
Child's gender	**Underweight (WAZ)**				**Total**
	Severely underweight<-3SD	**Moderate underweight≥-3SD to <-2SD**	**Normal ≥-2SD to ≤+2SD**	**Overweight >+2 to ≤+3SD**	
Boy	1(0.7)	0(0.0)	68(52.0)	1(0.7)	70
Girl	0(0.0)	0(0.0)	50(46.7)	0(0.0)	50

Table 6 presents the association between a child's gender and nutritional status, specifically focusing on underweight (Weight-for-Age Z-score, WAZ), across two distinct markets: Bodija and Ogunpa. In the Bodija market, among boys, 4 (2.7%) were classified as severely underweight, 2 (1.3%) as moderately underweight, 56 (47.3%) as normal weight, and none fell into the overweight category. Among girls, 1 (0.7%) was severely underweight, 2 (1.3%) were moderately underweight, 52 (44.7%) were normal weight, and 3 (2.0%) were overweight. The total number of boys observed was 62, while for girls, it was 58.

For the Ogunpa market, among boys, 1 (0.7%) was severely underweight, none were moderately underweight, 68 (52.0%) were normal weight, and 1 (0.7%) were overweight, out of a total of 70 boys. Among girls, none fell into the underweight categories, 50 (46.7%) were normal weight, and none were overweight, out of a total of 50 girls.

Table 7; Association between child's gender and nutritional status (wasting WHZ score)

Bodija market						
Child's gender	**Wasting (WHZ)**					
	Severe Acute Malnutrition <-3SD	**Moderate Acute Malnutrition≥-3SD to <-2SD**	**Normal ≥-2SD to ≤+2SD**	**Overweight >+2 to ≤+3SD**	**Obesity >+3**	**Total**
Boy	5(2.7)	0(0.0)	56(52.2)	0(0.0)	1(0.7)	62
Girl	0(0.0)	1(0.7)	52(44.0)	3(2.0)	2(1.3)	56
Ogunpa market						
Infant gender	**Wasting (WHZ)**					
	Severe Acute Malnutrition <-3SD	**Moderate Acute Malnutrition≥-3SD to <-2SD**	**Normal ≥-2SD to ≤+2SD**	**Overweight >+2 to ≤+3SD**	**Obesity >+3**	**Total**
Boy	1(0.7)	0(0.0)	63(52.0)	0(0.0)	1(0.7)	65
Girl	3(2.0)	0(0.0)	52(44.7)	0(0.0)	0(0.0)	55

Table 7 displays the association between a child's gender and their nutritional status, particularly focusing on wasting (Weight-for-Height Z-score, WHZ), in two distinct markets: Bodija and

Ogunpa. In the Bodija market, among boys, 5 (2.7%) were categorized as severely acutely malnourished, none were moderately acutely malnourished, 56 (52.2%) had normal nutritional status, none were overweight, and 1 (0.7%) was classified as obese, out of a total of 62 boys. Among girls, none were severely acutely malnourished, 1 (0.7%) was moderately acutely malnourished, 52 (44.0%) had normal nutritional status, 3 (2.0%) were overweight, and 2 (1.3%) were obese, totaling 56 girls.

For the Ogunpa market, among boys, 1 (0.7%) was severely acutely malnourished, none were moderately acutely malnourished, 63 (52.0%) had normal nutritional status, none were overweight, and 1 (0.7%) was obese, out of a total of 65 boys. Among girls, 3 (2.0%) were severely acutely malnourished, none were moderately acutely malnourished, 52 (44.7%) had normal nutritional status, and none were overweight or obese, with a total of 55 girls.

Table 8; Relationship between the dietary pattern of Respondents with the nutritional status of their children in both markets

Bodija market			
	Value	**Df**	**P-value**
Food consumption pattern-Wasting (WHZ)	34.175	8	.000*
	Value	**Df**	**P-value**
Food consumption pattern-Underweight (WAZ)	30.534	6	.000*
Ogunpa market			
	Value	**Df**	**P-value**
Food consumption pattern-Wasting (WHZ)	4.754	6	.576(NS)
	Value	**Df**	**P-value**
Food consumption pattern-Underweight (WAZ)	.925	6	.988(NS)

Note: NS- Not Significant p>.05, *Significant p<.05

Table 8 presents the relationship between the dietary patterns of respondents and the nutritional status of their children in both the Bodija and Ogunpa markets. In the Bodija market, there is a significant relationship between food consumption patterns and wasting (Weight-for-Height Z-score, WHZ) among children (Value = 34.175, Df = 8, P-value = .000*), indicating that the dietary habits of respondents play a crucial role in determining the nutritional status of their children regarding wasting. Similarly, the association between food consumption patterns and underweight (Weight-for-Age Z-score, WAZ) is significant (Value = 30.534, Df = 6, P-value = .000*), suggesting that dietary patterns significantly influence the likelihood of children being underweight. Conversely, in the Ogunpa market, the relationship between food consumption patterns and wasting (WHZ) among children is not significant (Value = 4.754, Df = 6, P-value = .576, NS), indicating that dietary patterns may not strongly correlate with wasting in this market. Likewise, the association between food consumption patterns and underweight (WAZ) is not significant (Value = .925, Df = 6, P-value = .988, NS), suggesting that dietary habits may not be significant determinants of underweight among children in the Ogunpa market.

Table 9: Relationship between socio-demographic characteristics and food consumption pattern of female traders

Bodija market			
	Value	**df**	**P-value**
Age	4.542	2	.108(NS)
Ethnic group	2.453	6	.876(NS)
Marital status	2.546	8	.960(NS)
Religion	7.200	6	.163(NS)
Educational level	11.325	6	.038*

Ogunpa market			
	Value	**df**	**P-value**
Age	111.683	3	.000*
Ethnic group	33.152	6	.000*
Marital status	29.000	9	.008*
Religion	5.216	6	.718(NS)
Educational level	14.723	9	.003*

***Significant p<.05, NS- Not Significant p>.05**

Table 9 displays the relationship between socio-demographic characteristics and the food consumption pattern of female traders in both the Bodija and Ogunpa markets. In the Bodija market, the statistical analysis reveals that age (Value = 4.542, Df = 2, P-value = .108, NS), ethnic group (Value = 2.453, Df = 6, P-value = .876, NS), marital status (Value = 2.546, Df = 8, P-value = .960, NS), and religion (Value = 7.200, Df = 6, P-value = .163, NS) do not significantly affect the food consumption pattern among female traders. However, educational level shows a significant relationship (Value = 11.325, Df = 6, P-value = .038*), indicating that the level of education influences the food consumption pattern among female traders in the Bodija market. Conversely, in the Ogunpa market, age (Value = 111.683, Df = 3, P-value = .000*), ethnic group (Value = 33.152, Df = 6, P-value = .000*), marital status (Value = 29.000, Df = 9, P-value = .008*), and educational level (Value = 14.723, Df = 9, P-value = .003*) significantly affect the food consumption pattern among female traders, as indicated by the statistically significant P-values. However, religion (Value = 5.216, Df = 6, P-value = .718, NS) does not show a significant relationship with the food consumption pattern.

Discussion

In both Bodija and Ogunpa markets, the respondents had mean ages of 29 years and 28 years, respectively. These figures are consistent with findings from related studies conducted in Sango market, Ibadan, Oyo state (Akinloye, 2010), which reported a mean age of 29 years among female traders, and in Bodija market, Ibadan, Oyo state, where the mean age was reported as 28 years (Araoye, 2003). Similarly, a study among female traders in Sokoto state reported a mean age of 30 years (Awosan et al., 2014). The age distribution of the respondents in this study indicates that they fall within the range of young adults, reflecting their reproductive, active, and youthful age distribution. The food consumption patterns in Bodija and Ogunpa markets reveal that legumes, vegetables, and cereals are frequently consumed in both markets, with daily and occasional intake. Fruits are regularly consumed, primarily 3-4 times per week, while beverages and snacks are also popular choices. It's notable that milk and meat products are consumed more regularly in Ogunpa market compared to Bodija market. Specifically, legumes were consumed daily by 2.0% of respondents in Bodija market, whereas in Ogunpa market, it was 2.7%. For vegetables, 2.0% of respondents in Bodija consumed them daily, while 18.0% in Ogunpa market did so. The prevalence of daily consumption of green leafy vegetables (41.3% and 56.0% respectively) among other food groups could be attributed to factors such as the availability of fresh green vegetables in the market and the rainy season, during which this study was conducted. Additionally, the high consumption might be due to the prevalence of the West African diet, which consists mainly of mixed dishes of green leafy vegetables served as accompaniments to cereals, roots, and tuber staples. Furthermore, the spouses of the majority of female traders in this study were farmers, potentially influencing dietary preferences (WHO, 2014).

Cereals were consumed daily by 2.7% in Bodija market and 10.0% in Ogunpa market, while root and tubers were consumed daily by 2.0% in Bodija market and 4.0% in Ogunpa market. Fruits were consumed daily by 19.3% in Bodija market and 33.3% in Ogunpa market. Beverages were consumed daily by 7.3% in Bodija market and 32.0% in Ogunpa market, while snacks were consumed daily by 56.0% in Bodija market and 54.0% in Ogunpa market. Contrary to the high consumption of snacks among respondents in this study, there was a low prevalence of snack

consumption among older traders in Ibadan, Oyo state (Akinloye, 2010). Milk and meat products were consumed daily by 9.3% in Bodija market and 28.7% in Ogunpa market. Overall, the consumption patterns vary slightly between the two markets, with Ogunpa market generally exhibiting higher frequencies of daily consumption across most food categories compared to Bodija market. The dietary habits among respondents in both Bodija and Ogunpa markets indicate a diverse but variable food intake. Ogunpa market had a higher percentage of respondents (47.5%) consuming food thrice daily compared to Bodija market (33.3%). This contrasts with a report from Sudan (WHO, 2003), where the majority of market women consume food thrice a day. Additionally, a higher proportion of respondents in Bodija market (57.5%) reported skipping meals compared to those in Ogunpa market (55.0%). This is consistent with a study in Umuaiha where half of the respondents affirmed that they skip meals (Nduba, 2018). Among those who skipped meals, a greater percentage in Bodija market cited lack of time to cook or eat (25.0%) as the reason, while in Ogunpa market, a higher percentage mentioned a preference for eating at the market (8.3%). This aligns with a study carried out in Sokoto where most female traders cited lack of time to cook as one of the reasons why they skip meals.

Regarding types of snacks or food consumed in the market, a larger percentage of respondents in Ogunpa market consumed biscuits/cakes/meat pie/puff-puff/chin-chin (29.2%) compared to those in Bodija market (8.3%). This corroborates the relatively high prevalence of snacking reported among adolescents in Osun state, Nigeria (Balogun and Owoaje, 2007). Market women, while waiting for their customers, may opt for snacks in between meals either to satisfy their appetite or for enjoyment of food (Chaudhury, 1988). However, consumption of snacks high in saturated fat could lead to the deposition of dietary fat in the adipose tissues and increase the chances of individuals becoming overweight or obese (Harrison). Conversely, Bodija market had a higher percentage of respondents consuming groundnut and gari (10.0%) compared to Ogunpa market (11.7%). These variations suggest distinct dietary behaviors and preferences among respondents in the two markets.

In both markets, there is a prevalence of normal-weight children, with variations observed in the proportions of underweight and overweight children across genders and markets. While the Bodija market exhibits a slightly higher prevalence of underweight girls and overweight boys compared to the Ogunpa market, both markets generally show a higher percentage of boys categorized as overweight compared to girls. The majority of children have a normal nutritional status, in line with a study by WHO (2019), with variations observed in the prevalence of severe acute malnutrition, moderate acute malnutrition, overweight, and obesity across genders and markets. While the prevalence of severe acute malnutrition and obesity appears to be slightly higher among boys in the Bodija market compared to the Ogunpa market, both markets exhibit similar patterns of nutritional status distribution among girls. The high prevalence of normal nutritional status among the children in this study might have resulted from the educational level of the mothers, constant health talks during antenatal clinics, and their various knowledge about the importance of good nutrition for children.This is similar to a study by Oboh et al 2024

The factors influencing lifestyle and dietary patterns varied between the Bodija and Ogunpa markets. The prevalence of malnutrition in this study was low compared to studies reported among children that recognized malnutrition as a health problem among them (Araoye, 2003; Awosan et al., 2014; Balogun and Owoaje, 2007). The variance between the low prevalence of malnutrition in this present study and that of other studies could be attributed to variation in socio-economic status, geographical location, and the level of knowledge on childcare practices (Nti, 2011). This study is less compounded by teenage motherhood, which is one of the causes of childhood malnutrition. In variance to the study among female traders in Abia state, where the majority of the respondents strongly agreed that the nature of work and the number of hours spent in the market affected their lifestyle and dietary pattern, more than half of respondents in this study strongly disagreed. In the Bodija market, 55.3% strongly disagreed with spending extended hours at work, contrasting with 38.7% in the Ogunpa market. Additionally, in Bodija, 3.3% strongly agreed with having low income compared to 14% in Ogunpa. Moreover, cultural

beliefs played a significant role in dietary habits, with 42% of Bodija respondents and 50.7% of Ogunpa respondents citing its influence. Educational level also impacted choices, with 46% of Bodija respondents having an agreeable stance, while 40.7% of Ogunpa respondents shared the sentiment. Furthermore, food taboos influenced 51.4% of Ogunpa respondents and 33.3% of Bodija respondents. The analysis highlights the nuanced interplay of socio-economic factors and cultural norms in shaping dietary habits and lifestyle choices among market-goers in these areas.

Educational level plays a significant role in determining the food consumption pattern among female traders. In contrast, in the Ogunpa market, age, ethnic group, marital status, and educational level significantly influence the food consumption pattern, highlighting the importance of considering socio-demographic characteristics in understanding dietary behaviors among female traders in different markets. The result from this present study showed that maternal literacy is associated with the well-being and nutritional status of children as high levels of literacy were recorded among female traders according to Ayinde et al, 2022 and it is also one of the factors that significantly contributed to the good nutritional status of their children (WHO, 2009).

In the Bodija market, there exists a significant relationship between food consumption patterns and wasting (WHZ) among children ($x2 = 34.175$, P-value = .000*), highlighting the pivotal role of dietary habits in determining children's nutritional status regarding wasting. Similarly, the association between food consumption patterns and underweight (WAZ) is significant (Value = 30.534, Df = 6, P-value = .000*), indicating that dietary patterns significantly influence the likelihood of children being underweight. Conversely, in the Ogunpa market, the relationship between food consumption patterns and wasting (WHZ) among children is not significant (Value = 4.754, Df = 6, P-value = .576, NS), suggesting that dietary patterns may not strongly correlate with wasting in this market. Likewise, the association between food consumption patterns and underweight (WAZ) is not significant (Value = .925, Df = 6, P-value = .988, NS), indicating that dietary habits may not be significant determinants of underweight among children in the Ogunpa market.

Conclusion and Recommendation

The findings from the study shed light on the dietary habits and nutritional status of female traders and children in Bodija and Ogunpa markets. It is evident that there are diverse dietary patterns and variations in nutritional status between the two markets, influenced by factors such as socio-economic status, cultural beliefs, educational level, and geographical location. The prevalence of normal-weight children suggests overall adequate nutrition, albeit with some variations in the proportions of underweight and overweight children across genders and markets. These variations emphasize the need for tailored interventions and nutritional education programs to address specific nutritional needs and challenges, especially among vulnerable groups. Furthermore, the study highlights the importance of maternal literacy and education in shaping dietary behaviors and improving the nutritional status of children. Efforts to enhance literacy levels among female traders can have positive ripple effects on the well-being of their families and communities.

Addressing dietary habits and promoting healthy eating practices, particularly among market-goers, requires a multi-faceted approach that considers socio-economic factors, cultural norms, and educational opportunities. Public health initiatives aimed at improving dietary diversity, promoting healthy snacking options, and increasing awareness about nutrition can contribute to better health outcomes among market communities. Furthermore, fostering a supportive environment that encourages healthy dietary habits and nutritional practices is essential for promoting overall well-being and reducing the prevalence of malnutrition among market-goers and their children. Collaboration between government agencies, community organizations, and healthcare providers is vital for implementing effective interventions and programs tailored to the specific needs of market communities.

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