Assessment of the Lifestyles and Feeding Patterns of Selected Families in Agbor Metropolis, Delta State, Nigeria

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Abstract

The study was a nutritional assessment of the contemporary life of the people of Agbor in Delta State, with a view to determining how their attitude to food was predicated on their lifestyles. The study population consisted of 300 working class individuals in Agbor metropolis from which 100 were randomly selected. In order to effectively collect information from the respondents, a 26-item questionnaire was designed to determine the influence of people's health and cultures on their feeding patterns. The research instrument was validated and pilot-tested twice on the respondents and a reliability co-efficient of 0.85 was established. The Chi-square statistic was used to analyse the data generated at the 0.05 level of significance, and it showed that socio-economic status was significant as a determinant of feeding pattern. Furthermore, unhealthy lifestyles from bad feeding patterns disposed some individuals to nutritional related diseases such as obesity (3.56 + 1.153), diabetes (3.41+1.263), hypertension (3.12+1.395) and ulcer (3.64+1.312). The study recommended dispositions towards healthy lifestyle for the people, drastic reduction of foods that are calorie dense, skipping breakfast, drinking sugary beverages respectively, and emphasised adequate intake of nutrient dense foods such as fruits and vegetables and foods rich in essential fatty acids to maintain the body's health status.

Keywords: Calorie dense foods, feeding pattern, lifestyle, nutrient dense foods, socio-economic status.

INTRODUCTION

Biological molecules which make up the body of humans require the right mix of macro and micro nutrients to function at optimum efficiency (Morris and Mohiuddin, 2022). The nutrients which come from the food eaten keep cells alive, healthy and active (Calabrese, Gibby, Meinke, Revilla and Titchenal, 2019). Nutrient requirements differ due to differences in age, gender and type of work done as well as other exerting activities. An individual's

sources of nutrients also differ, depending mainly on the kind of food available within the locality, season and the economic capacity to purchase them (Conklin, Maguire and Monsivais, 2013). According to Collins (2017), lifestyle is described as habits, attitudes, tastes, moral standard, and economic level that constitute the mode of living. The variables of lifestyle as identified by Moraes and Falcao (2013) include gender, age, socio-economic level, smoking, alcohol use, physical inactivity, sedentary behaviour and nutrition related habits. The Australian Government (2017) in a research report on health studies documented that dietary pattern and practices are influenced by several physiological factors that affect food consumption which include sex, age, body size, metabolic rate, health status, level of physical activities, pregnancy, hormonal secretion, use of drugs and psychological comparison. The pattern and lifestyle of families are influenced by their economic status, culture, religious beliefs, feeding practices, food consumption, nutrition, marketing and health (Brent, 2017). According to Brent (2017), the ethno-cultural background of a people can play a key-role in influencing their food choices and stressed that many people will gravitate towards foods they find comforting or familiar, which may of course differ from culture to culture and further summarized that feeding pattern and family lifestyle are influenced by a number of factors.

Rodriguez (2017) described eating pattern as why and how people eat, which foods they eat, and with whom they eat, as well as the ways people obtain, store, use and discard food as determined by socio-cultural, religious, economic, environmental, and political factors. The average Nigerian diet is mainly carbohydrate foods such as cassava products, yam, rice occasionally interspersed with beans, fish, beef and vegetables (Adeleke, 2022). Food pattern varies with occupational demands (Tanaka, Tsuji, Asakura, Senju and Shibata, et al (2018). Invariably people who are engaged in menial unskilled jobs require more energy-giving foods. Similarly, youths and adolescents diet is high in processed, overcooked and packed foods, with insufficient nutrients such as vitamin A, calcium and fibre, and with too many calories and too much fat, sugar and sodium (Torchell Mind and Body, 2012). According to Kannall (2017) the high levels of starch in the processed food raise the sugar level in the blood and could eventually lead to insulin resistance, and advised that proper nutrition helps to keep the body in good health and prevents many types of chronic diseases, while on the other hand, poor nutrition may predispose the body to risk of cardiovascular diseases, diabetes and certain forms of cancer.

Good nutrition involves eating whole foods from a variety of food groups throughout the day. Whole foods are unprocessed, natural and do not contain artificial colouring or flavouring (Migala, 2022). As the typical food of an average Nigerian is got from carbohydrate, the latter is better sourced from whole food sources which includes brown rice, oats and whole wheat bread (Migala, 2022). Lipids from nuts, seeds, vegetable oils and fish are excellent sources of energy and also maintain cell membrane, aid the absorption of some vitamins and provide cushioning to organs (Kannall, 2017).

Furthermore, protein-rich sources like lean meat, beans and low-fat dairy products help with the growth and repair of tissues, muscles as well as production of hormones (Lehman, 2014; Revilla, Titchenal, Calabrese, Gibby and Meinke 2020); they also boost the immune system (Coll, Farooqi and O'Rahilly, 2007). In addition, eating good equally involves adequate consumption of vitamins, minerals and fibre. The eating of a variety of fresh fruits and vegetables, dairy products, lean protein and nuts in their right proportion can provide the body with its daily requirement of the nutrients (Mahaffy, 2014). However, obvious nutritional deficiency symptoms such as anaemia, poor vision and reduced immune function may become apparent if the consumption of whole foods is compromised (Bjarnadottir, 2019).

A common unhealthy diet prevalent in most developing countries comprises of saturated fat, trans fat, salt and sugars and lacking in fruits, vegetables, whole grain and fibre (Bellows and Moore, 2018). These unhealthy eating habits can affect the intake of nutrient comprising energy, protein, carbohydrates, essential fatty acids, vitamins and minerals as well as fibre and fluids (Tansi International College, 2020). The problem with today's bad eating habit is the common major health risk factor, a metabolic syndrome, which is a blend of overweight or obesity combined with today's sedentary life styles, stress, diabetes, coronary heart disease, increased blood pressure or insulin resistance (TorChell Mind and Body, 2012). According to Paula (2015) obesity exposes the individual to the risk of several health conditions including high cholesterol, type-2 diabetes, high blood pressure, stroke, heart disease, gall bladder disease, cancer, depression, osteoarthritis, skin problems and breathing problems. So the consequences of poor feeding pattern and contemptible lifestyle are enormous.

Paula (2015) added that restaurant foods, roadside meals, fast foods and processed foods have become a notable source of feeding for most people. The author further reported that the foods were time-saving, convenient and meet the needs of the working class, however, they were sometimes loaded with detestable nutrients such as sodium (predominantly present in sodium glutamate in 'ajinomoto'). When excess sodium is consumed in the food, the kidneys hold onto water to maintain the sodium balance in the body. This gives rise to increased blood volume, which can turn into high blood pressure or hypertension (Grillo, Salvi, Coruzzi, Salvi and Parati, 2019) which in turn increases the risk of heart disease and stroke (WHO, 2015). Furthermore, excessive bad eating habit predisposes the body to cardiovascular disease which has become a silent killer in Nigeria. Low Density Lipoprotein (LDP) or "bad" cholesterol is generated from saturated fats which are predominantly present in whole milk, butter, red meat, ice cream as well as processed foods (WebMD, 2020). Trans fat which comes from commercially baked items and processed foods increase LDL levels and decreased High Density Lipoproteins (HDL) or "good cholesterol". The abundance of high LDL and low HDL levels is a major risk factor for cardiovascular disease (Paula, 2015).

The lifestyle of modern day families is moderating preferences for food intake. Coupled with prevailing economic condition in Nigeria these days the ability of many families to meet basic food needs has been compromised. In response to this, the nutrient intake of some households in Agbor metropolis appears to be repleted with low-protein, low-fibre, and calorie-dense diets. This changing pattern, with respect to carbohydrate consumption, appears to be a major contributing factor to the prevalence of obesity, with its associated debilities. In addition to the above, some members of the community live a highly integrated social lifestyle that embraces the consumption of alcohol. Alcohol consumption predisposes most households to its dangerous effects like obesity, cardiovascular diseases, hypertension, diabetes, osteoporosis and cancer as well as diversion of family income from purchase of quality foods. Children from families where poor feeding habits and bad lifestyles are obvious suffer malnutrition.

Furthermore, large-sized families whose wage bills far exceed their financial capacities are constrained to cut down on their food budgets and consequently compromise feeding patterns and food choices. The main purpose of this study was to assess the lifestyle and feeding patterns of some families in Agbor metropolis, Delta State. Specifically, the study sought to:
i.   Assess the influence of socio-economic status on feeding patterns of people in Agbor metropolis.
ii.   Determine the influence of people's health status on their feeding pattern.

iii. Investigate the influence of lifestyle on the feeding pattern of families in Agbor metropolis.

The study was guided by the following research questions:

a) In what ways does socio-economic status of families influence their feeding pattern in Agbor metropolis?
b) To what extent does feeding pattern influence health of families in Agbor metropolis?
c) To what extent does lifestyle influence the feeding pattern of families in Agbor metropolis?
d) To what extent does culture influence the feeding pattern of families in Agbor metropolis?
e) How do emotions influence their feeding pattern?

The study tested the following hypothesis: There is no significant relationship between socio-economic status and feeding patterns of families in Agbor metropolis. This hypothesis was tested at the 0.05 level of significance.

This study disposed the people of Agbor metropolis and environs and their families to cultivating positive attitude towards improving their feeding pattern and lifestyles.

The study assessed the feeding patterns and lifestyles of 300 working class individuals in Agbor metropolis and neighbouring town around Agbor in, Delta State. Indicators of feeding patterns comprised of socio-cultural and economic factors, food accessibility, environmental influence, religion as well as food preferences. Also lifestyle indicators used in the study include gender, age, socio-economic level, smoking, alcohol use, physical inactivity, sedentary behaviour and nutrition related habits. The study was limited to civil servants who are literate enough to respond to the research instrument with least assistance.

MATERIALS AND METHODS

Study design
The study was a descriptive survey of the contemporary life of the people of Agbor metropolis in Delta State, with a view to carrying out a nutritional assessment on them, as well as determining how their attitude to food was based on their lifestyles.

Population of the study
The study was carried out in Agbor metropolis and environs with a population of 300 working class individuals as the research population based on the location of their residence. From this, a sample of 100 was randomly selected using the proportionate random sampling technique.

Sampling technique
The sample size of 100 was drawn from the population of 300 using a proportion of 70 from Agbor main town and 30 from the environs, derived thus: population from the metropolis was 210 + 90 (from the environs) = 300. 210/300= 0.7; 90/300= 0.3. Thus, metropolis sample =100× 0.7= 70; environ sample = 100 × 0.3= 30.

Instrumentation
The research instrument was a questionnaire titled, "Assessment of feeding patterns and lifestyles of some selected families in Agbor metropolis and environs, Delta State". It was designed to assess the indicators of feeding pattern and lifestyles of the study population. It was drawn on a five-point rating scale as follows: Strongly Agree (SA) 5; Agree (A) 4; Undecided (U) 3; Disagree (D) 2 and Strongly Disagree (SD) 1 respectively.

Validation of instrument
The research instrument was scrutinized, corrected and modified by an expert in nutrition and dietetics and another from measurement and evaluation respectively to improve the face validity and construct validity.

Reliability of instrument
Reliability was established for the instrument through test re-test method. A pilot study was carried out with 30 civil servants in Obiaruku metropolis in Ukwani L.G.A. twice within two weeks. Pearson Product Moment Correlation Coefficient (r) was used to determine the reliability index of which 0.85 was obtained.

Administration of instrument
Two research assistants assisted in the administration of the instrument. They are conversant with research processes and so do not require special training from the researcher. A total of 100 copies of the questionnaire were distributed by hand, completed on the spot and returned.

Data analyses
Arithmetic mean (X) and standard deviation (SD) were used to answer the research questions (1, 2, 4, 5 and 6) using a decision index of 3.0 points. Items which had arithmetic mean (X) value of up to 3.0 and above were accepted while those with points below 3.0 were rejected. The Chi-square statistic was used to test the hypotheses (covering research questions 1 and 3) at 0.05 level of significance.

RESULTS
The results depicting how the socio-economic status of families influenced their feeding patterns in Agbor metropolis are shown in Table 1.

Table 1: Influence of socio-economic status on feeding pattern

	X	SD	Decision
1. Your family eats 3 meals per day	3.82	1.274	Accepted
2. Meals are skipped in your family due to insufficiency	3.33	1.393	Accepted
3. Your income provides your family with balanced meals	2.89	1.063	Rejected
4. Adequate fruits are present in your meals	2.94	1.612	Rejected
5. Your family eats enough vegetables	2.47	1.660	Rejected

Table 1 shows that most respondents ate three meals a day with a mean value of 3.82+ 1.274. However, some families skipped meals due to insufficient resources (3.33 ±1.393), consequent upon which family incomes could not provide balanced meals (2.94), adequate fruits and vegetables in their diets (2.47+ 1.66).

The results depicting the influence of feeding patterns on health of families is shown in Table 2.

Table 2: Influence of feeding pattern on health

	X	SD	Decision
1. You or your family members had suffered from either of these:			
i. Diabetes			
ii. Odesity	3.41	1.263	Accepted
iii. Cardiovascular diseases	3.56	1.153	Accepted
iv. Hypertension	2.12	1.683	Rejected
v. Ulcer	3.12	1.395	Accepted
	3.64	1.312	Accepted
2. You are advised not to eat eba/akpu/pounded yam on medical grounds.	3.06	1.230	Accepted

From Table 2, some members of families used in the study had suffered consequences of poor pattern of feeding. For example it was shown that some had suffered from or were currently suffering from diabetes (3.41+ 1.263), obesity (3.56+ 1.153) hypertension (3.12+ 1.395) and ulcer (3.64 + 1.312) and were consequently placed on special diets on medical grounds (3.06 + 1.230, Table 2, item 2).

The results depicting the influence of lifestyle influence on the feeding pattern of families in Agbor metropolis is presented in Table 3

Table 3: Influence of lifestyle on family feeding pattern

	X	SD	Decision
1. Your family eats commercial foods regularly	3.12	1.413	Accepted
2. Fried foods are preferred in your home	4.21	1.185	Accepted
3. Your meals include: i cakes, biscuits, "shawama"	2.83	1.046	Rejected
ii. soft drinks and ice cream	3.16	1.173	Accepted
4. Your family often skip meals	3.16	1.621	Accepted
5. Your family does not eat breakfast together	4.43	0.893	Accepted
6. You consume alcoholic beverages regularly	2.93	1.547	Rejected
7. Your staple food contains mainly akpu and other carbohydrates (yam, rice etc)	3.41	1.075	Accepted

Table 3 shows that the people's lifestyle determined their preferences for food. While some respondents consume commercial foods regularly (item 1, 3.12+1.413), a reasonable number of them have cravings for fried foods (item 2, 4.21+1.185). Junk foods was not common among the respondents (item 3, 2.83+1.046), but some families skipped meals (item 4, 3.16+1.621) and most do not eat breakfast together (item 5, 4.43+0.893). Consumption of alcoholic beverages was not rampant among the people (item 6, 2.93+1.547), but carbohydrates meals was prominent in their foods (item 7, 3.41+ 1.075).

The results depicting the cultural influence on the feeding patterns of families in Agbor metropolis is presented in Table 4.

Table 4: Cultural influence on family lifestyle

	X	SD	Decision
1. You abstain from eating meat on holy days of Obligation	3.67	1.181	Accepted
2. Your culture forbids pregnant women from eating snail.	2.37	1.472	Rejected
3. Your culture forbids people from eating:			
i. meat from rams	2.06	1.305	Rejected
ii. Pork	2.30	1.337	Rejected
iii. Rabbit	2. 42	0.485	Rejected

Table 4 shows that cultural beliefs played some roles on family lifestyle with respect to pattern of feeding. For instance most respondents abstain from eating meat on holy days of obligation (3.67+1.181). However, there are no cultural restrictions on pregnant women eating snails (2.37+1.472), and other people from eating meat from rams (item 3i, 2.06 $\pm$ 1.305), pork (item 3ii, 2.30+1.337) and rabbit (2.42 $\pm$ 0.485) respectively.

The result of emotional influence on feeding patterns is presented in Table 5.

Table 5: Emotional influence on feeding pattern

	X	SD	Decision
1. You usually have sudden and urgent desire to eat	3.87	1.292	Accepted
2. You have specific cravings for biscuits, ice cream, pastas, etc	3.71	1.183	Accepted
3. You eat more when you are feeling stressed	3.39	1.340	Accepted
4. You still eat when you are not hungry or when you are full	3.55	1.311	Accepted
5. You eat to feel better (to calm down when bored, sored, anxious etc)	3.67	1.321	Accepted
6. You often reward yourself with food	3.60	1.318	Accepted
7. You regularly eat until you are uncomfortable	2.54	1.673	Rejected
8. You abstain from food when you are angry	3.42	1.374	Accepted
9. You reject food when you quarrel with your spouse	3.15	1.462	Accepted

Table 5 shows that emotions played a major role on the feeding pattern of the respondents. While some have sudden and urgent desires to eat (3.87+1.292), others showed specific cravings for snacks (3.71+1.183). It further showed that most respondents still eat more when stressed (3.39 ±1.340), when full (3.55+1.311) and when bored (3.67+1.321), while some reject food when angry (3.42+ 1.374) and when they quarrel with their spouse (3.15±1.462).
Hypothesis 1:. There is no significant relationship between socio-economic status and feeding pattern of people.

Table 6: Level of relationship between socio-economic status and feeding pattern of people

S/N	Items	S	SD	Df	χcal	χtab of sig	Level	Remark
1	Your family eats 3 meals per day	3.82	1.274					
2	Meals are skipped in your family do to insufficiency	3.33	1.393					
3	Your income provides your family with balanced meals	2.89	1.063	4	105.34	9.488	0.05	S
4	Adequate fruits are present in your meals	2.94	1.612					
5	Your family eats enough vegetables	2.47	1.660					

From Table 6 the test statistic χcal 105.34 is greater than χtab 9.488 at 0.05 level of significance so the null hypothesis is rejected. This implies that socio-economic status of the respondents has significant relationship with their feeding pattern.

DISCUSSION
Study relationship between socio-economic status and feeding pattern of the people was significant. This finding was in agreement with Guansheng (2005) who reported that the requirements of energy and nutrients are different due to difference in race, age, sex, and physical activity among the Chinese people. While some families ate three meals daily, others skipped meals due to insufficient resources and could hardly afford balanced meals. The New Health Advisor (2017) had warned that skipping meals or outright starvation might predispose an individual to eating food loaded with proteins, fats and calories. Rather, people's socio-economic status determines their capacity to purchase and consume desired food recipes.

Apart from cardiovascular diseases, the study showed that some members of the study population had suffered or are suffering from on-going nutrition-related diseases such diabetes, obesity, hypertension and ulcer as a result of which they were placed on diet restrictions. Fruits were reported to be inadequate in the diets of families studied. The study further noted that some respondents preferred commercial and fried foods. However, junk food items were unpopular among the respondents but many skipped meals and did not eat breakfast together at home, in agreement with Park (2009), who reported that working parents often do not eat together and that fathers tend to miss family breakfast, skip family meals at home, eat at work or feed their families on take-out-meals, while mothers are likely to skip breakfast and buy restaurant or prepared eateries instead of cooking. Culture also affected the people's feeding patterns in this study. For instance, they would not eat meat on holy days of obligations such as on "good Friday" in support of Garduno-Diaz, (2011), who stated that "some holy days of obligations and fasting days such as "good Fridays" and lent periods are observed by Catholics and orthodox Christians as days of abstinence from meat and fasting respectively". Cultural restrictions preventing pregnant women from eating snails was not practiced in Agbor metropolis and environs. Similarly, culture permits consumption of meat from rams, pork and rabbits as opposed to other climes, supporting Brent (2017) who reported that people gravitate towards food they find comforting or familiar, which may differ from culture to culture.

The study further revealed that for some respondents emotions played major roles in their feeding patterns as represented by a mean of 3.42+ 1.374, who reject food when angry. Binge eating was common among some respondents, while others ate more when stressed (3.39 ±1.340) anxious or bored (3.67±1.321). However, some respondents, especially males abstained from food when angry or in dispute with their spouses as represented by a mean of 3.15 ± 1.462.

CONCLUSION

Good nutrition involves eating whole foods from a variety of food groups throughout the day. The study has recorded that several indicators of lifestyle determined feeding pattern of the respondents. The socio-economic status of families reduced their purchasing power and ability to provide balanced meals for consumption due to large family sizes and dependent relatives and further restricted them to lifestyles of calorie dense diets. Communal lifestyle predisposed them to drinking alcoholic beverages with its attendant side effects. Consequently, some of them were contending with one or more nutritional disease such as diabetes, obesity, hypertension, high blood pressure and ulcer as a result of poor feeding patterns. It is pertinent to conclude that lifestyles and feeding patterns have reciprocal influences in families' choice of food.

Based on the findings recorded in this study, families should exploit available cheap sources of foods in their environment that would guarantee balanced diets. Varieties of fruits which abound within the season should be regularly incorporated into family menus to provide members with adequate minerals and vitamins. Families should try as much as possible to eat breakfast together to avoid commercial or processed foods with related health challenges. Family members should regularly monitor their health statuses as well as ensure that these are not compromised by their lifestyles. Families should avoid binge eating which usually predisposes people to obesity and other related nutritional malaise. Families should cultivate the habit of love and understanding even in hard times to ameliorate anger and its debilitating health consequences.

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