# Consumption Pattern of Vegetables among Rural Households in Moro Local Government Area of Kwara State, Nigeria

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## ABSTRACT

*Nutritional status of people in developing countries is not in good shape particularly the vulnerable (rural populace) and the situation needed urgent attention. And most rural households had uneven food intake pattern throughout the year based on season and affordability due to different families' income level. Vegetable, a very important food group for the attainment of good health, was investigated to determine its consumption pattern and perceived benefits among rural dwellers in Moro Local Government area of Kwara State, Nigeria. A random sampling technique was applied to select 102 respondents and well structured questionnaire was used for data collection. The result indicates that 44.1 per cent were male and 55.9 per cent were female. Majority (79%) of them was married and only 32.1 per cent had no formal education. There was a significant relationship between selected variables and personal characteristics of respondents. A significant difference was also existed in the consumption pattern of vegetables among the consumers. The study however showed a low consumption rate for cucumber, cabbage and lettuce which are not just nutritious but also medicinal. The study recommended that nutrition education should be put in place most especially in the rural areas on the benefits of vegetable consumption by training women on how to prepare different delicacies from vegetables to improve rural health and production capacity.*

***Key words:*** *Consumption pattern; Vegetables; Rural households;*

Consumption of food generally by the people is determined by the availability accessibility and affordability of the food at the people's locality throughout the year. This principles applies to the consumption of vegetables among the people, most especially even know as a seasonal food coupled with the very poor stage of storage and preservation facilities in our society. According to *Wright (1979)* refers to vegetables as perishable plant foods which exist in hundreds of variety consumed in different parts of the world. The variety accounting to Wright can be grouped as follow; the green vegetables which include lettuce, spinach, cabbage, bush okro (ewedu), water leaf, okro parsley, green beans etc, the root and tubers, i.e carrot, bed root, turnip, celeriac, yam, potatoes, cassava, cocoyam and bulbs as onion, garlic, lick etc. Fruit vegetables are cucumber, tomatoes, pepper, avocado, pumpkin, garden egg etc. stem vegetables as asparagus, celety etc. The varied vegetables enjoyed different rate of consumption by people, because of their varied colours, texture and nutritive content. Vegetables improves the appetite of the consumer by stimulating the secretion of digestive enzymes which create urge for food and aid digestion of foods in carbohydrate, protein and fat (*Mahan and Stump, 2004*).

Vegetables when consumed frequently and of adequate quantity prevent digestive leucocytosis, an inflammation process in the intestine when beginning meal with cooked foods often. Vegetables produce greater safety feeling than cooked foods with higher calorie content. These make vegetable desirable to loose or maintain weight. It possesses these qualities because no vegetable is fattening except if fried (*Pamplona-Roger, 2006*). With these roles of vegetables in attaining sound health, it should not be considered a mess side dish to the "main dish" quite contrary.

Vegetables are able to carry out these roles because of the nutrient composition. *Marison and Hark (1999)* stated that though vegetables contain 80-95 per cent water, but this does not mean they are low in nutritional value. The remaining 5-20 per cent of solids contains substances of great biological and therapeutic value. The nutrients include calcium, potassium and iron which are most abundant. Potassium increases urine production and reduces arterial blood pressure. Calcium builds bone tissues and reduces cases of osteoporosis and other calcium deficiency disorders. Iron in vegetables makes it anti-anaemic and facilitate the production of red blood cells with the aid of Vitamin C (*Pamplona-Roger, 2006*). Other major nutrients in vegetables are pro Vitamin A (Carotinoids) in coloured vegetables, vitamin B5 and K. Provitamin A (plant Vitamin A) an antioxidant which also helps in tissue growth and repair, resistance to infection and good eye sight. Vitamin Bs are essential in carbohydrate and other nutrients metabolism Vitamin C promotes resistance to infection through its immunologic activity of leukocytes (white blood cells) and antioxidant which eliminates free radicals within the body system. Vitamin K in vegetables helps in blood clothing in case of injury or childbirth. The vitamin also helps in the formation of calcified tissues, (*Mahan and stump, 2004*). Fibre is also an important component of vegetables which is vital in the prevention of non-communicable diseases like cardiovascular diseases, overweight, obesity, diabetics etc. (*Wardlaw and Kessel, 2002*). Fibre also prevents constipation, increases the fecal volume and facilitates it passage through the digestive tract. This makes vegetables to have laxative effect (*Pamplona-Rogers, 2006*).

However, it worth stating that in spite of all the nutritional and medicinal importance of vegetables the intake pattern is still very low, considering the increase in deficiencies of different nutrients derivable from vegetables. This therefore, poise a great concern vis-à-vis the health status of rural people which may have negative effects on their production capacity. The specific objectives were to;

i. Identify personal characteristics of respondents.
ii. Estimate the frequency of consumption of vegetables by the respondents.
iii. Determine relationship between selected personal characteristics of respondents and their consumption pattern of vegetables.
iv. Examine the significance differences in the consumption pattern of the respondents.

## METHODOLOGY

This research work was conducted in Moro Local Government Area of Kwara State, Nigeria. The sample was drawn using random sampling technique in the selected towns/villages which include Bode-Saadu, Shao, Molete, Jebba, Elemere, and Lanwa. In each of the six selected towns/villages, seventeen (17) respondents were each selected, thus making a total of one hundred and two (102) respondents used for the study.

Structured questionnaire was used to collect information from the respondents. Section A of the questionnaire contains information on personal characteristics of the respondents. Section B sought information about the frequency of vegetable consumption by the respondents using 5-point likert type scale which was rated as follow; Strongly Agree (5), Agree (4), Neutral (3), Disagree (2) and Strongly Disagree (1). Data collected were subjected to frequency counts, percentages, mean scores, Karl Pearson's correlation coefficient and ANOVA.

## RESULTS AND DISCUSSION

Table 1 showed that 55.9 per cent of the respondents were female while 44.1 per cent were male. Majority of them 79 per cent were married. With this, following *Anyakaoha and Eluwa (1991),* who observed that married people most especially females are mindful of their intake, it follows therefore that the respondents stands to be mindful of their food intake. It is also shown that 32.4 per cent had no formal education while majority (67.6%) was literates, though with 15.2 per cent having just primary education. To this, *Haselgrove and Scallon (1983)* and *Rogers (2003)* have, stated that education enhances awareness and so awareness of the people particularly on the nutritional status stands to be enhanced with their level of education.

Also, occupation of people determines the consumption pattern of given items of food. The table also revealed that 41 per cent of the respondents were traders and therefore follows that this group may not necessarily mind the intake of vegetables. This is in line with the findings of *Oguntona et al (1999)* who stated that most traders majorly feed on street foods common in their locality which usually lack vegetables. Income is another variable that can significantly influence the

**Table 1. Personal characteristics of respondents (N=102)**

| Characteristics | | No. | % |
|---|---|---|---|
| Sex | Male | 45 | 44.1 |
| | Female | 57 | 55.9 |
| Marital Status | Single | 12 | 11.8 |
| | Married | 79 | 77.5 |
| | Divorced | 05 | 04.9 |
| | Widowed | 06 | 05.9 |
| Qualification | No formal education | 33 | 32.4 |
| | Primary | 16 | 15.7 |
| | Secondary | 09 | 08.8 |
| | NCE | 05 | 04.9 |
| | ND | 18 | 17.6 |
| | HND | 06 | 05.0 |
| Occupation | Artisan | 12 | 11.8 |
| | Civil Servant | 36 | 35.3 |
| | Trading | 42 | 31.2 |
| | Private Sector | 02 | 02.0 |
| | Unemployed | 02 | 02.0 |
| | Farming | 03 | 02.9 |
| | Retired | 05 | 04.9 |
| Income | N10,000 | 20 | 19.6 |
| | N1,000-15,000 | 28 | 27.5 |
| | 15,000-20,000 | 11 | 10.8 |
| | ≥ N30,000.00 | 26 | 25.5 |

intake of food. On this, the findings of this study revealed that 57.9 of the respondents have income level below N10,000.00 (naira) and N20,000.00 per month while below average (42.2%)were those with average income per month to be above N20,000.00. The low economic status of respondents also can influence their consumption pattern.

Results in Table 2 revealed that tomatoes, onions and pepper had highest consumption in a week and rated 1st, 2nd and 3rd respectively. Other vegetables with low consumption rate were cucumber, cabbage and lettuce rated 12th, 13th and 14th positions with other vegetables. The low rate of consumption of these highly nutritious vegetables could deprive them from benefits that could enhance good health. Supporting this *Attah (2002) and Olaniyi (2008)* reported that these leafy vegetables are not only nutritious, but also medicinal; as some are blood builder, prevent diseases like diabetes etc.

Table 3 revealed that factors such as affordability and accessibility with mean values of 4.22 and 4.03 respectively has higher benefit than availability and attractive colour with lower mean values of 3.64 and 3.63 respectively. This is in line with the findings of *Wardaw and Kessel (2002)* and *Tewe et al (2001)*

**Table 2. Frequency of vegetable consumption in a week**

| Vegetables | Rank | Mean | SD |
|---|---|---|---|
| Spinach | 6th | 2.4412 | 1.14817 |
| Okro | 8th | 1.45‘0 | 1.26356 |
| Broh Okro | 4th | 2.8333 | 1.08165 |
| Water leaf | 11th | 0.9804 | 0.93322 |
| Lettuce | 14th | 0.4216 | 0.73708 |
| Cabbage | 13th | 0.5784 | 0.70971 |
| Carrot | 5th | 2.6667 | 1.02767 |
| Onion | 2nd | 3.5392 | 0.80434 |
| Garlic | 10th | 1.2157 | 1.26356 |
| Potato | 9th | 1.2353 | 0.90298 |
| Cucumber | 12th | 0.6667 | 0.94746 |
| Tomatoes | 1st | 3.8039 | 0.56357 |
| Pepper | 3rd | 3.2157 | 1.28685 |
| Garden Eggs | 7th | 1.7255 | 1.28323 |

**Table 3. Perceived benefits of vegetables**

| Factors/Benefits | Mean | SD |
|---|---|---|
| Available whole year | 3.6373 | 1.2331 |
| Affordability | 4.2255 | .96377 |
| Accessibility | 4.0392 | .90018 |
| Attractive Colour | 3.6275 | 1.27366 |
| Easy toileting | 4.0392 | .90018 |
| Maintaining weight | 3.3039 | 1.39155 |
| Improving health | 4.0196 | 1.25722 |
| Cultural beliefs | 2.5196 | 1.59660 |

who opined these factors affect even the most favoured vegetables. In addition, colour of the vegetables do not play significant role in the consumption pattern of the people bearing in mind respondents with non-formal education with trading as majority’s occupation in the study area. Also, as revealed in the table as per the perceived benefits, majority of the respondents accepted vegetable roles of easy toileting and improving health status with mean values of 4.03 and 4.01 respectively. Others like maintaining weight and cultural beliefs have mean values of 3.30 and 2.51 respectively, showing respondents’ non-conviction on those factors. In relation to this, *Mitchell et al (2005),* opined that vegetables help in improving health and prevent the incidence of cardiovascular and related diseases, removing cholesterol from the digestive tract before been absorbed.

Results in Table 4 showed that there was significant relationship between the selected personal characteristics of the respondents and their vegetable consumption pattern. This is in line with *Oladipo (2006)* and *Rogers (2003)* whose findings revealed a significant

**Table 4. Relationship between respondents' personal characteristics and pattern of vegetable consumption**

| Personal Characteristics | Linear by Linear Association | 'r' value |
|---|---|---|
| Sex | 65.800 | .856** |
| Occupation | 76.097 | .936** |
| Income | 92.904 | .972** |

**Significance level = 0.01

**Table 5. Anova table showing the differences in the consumption pattern of vegetables among respondents**

| Variable | N | $\overline{X}$ | Sd | Df | F-Cal | F-tab |
|---|---|---|---|---|---|---|
| Intake pattern | 102 | 26.77 | 12.38644 | 101 | 21.831 | 1.64 |

relationship of personal characteristics of respondents and some independent variables like attitude to innovation, adoption of recommended technology e.t.c.

From Table 5 it is shown that the F- calculated (21.83) against the tabulated value of 1.64. and as such, the null hypothesis is rejected. This implies that there exist differences in the consumption pattern of vegetable among respondents. The difference could be adduced to the fact that different people have different choices for food, either as a result of educational exposure, degree of cosmopolites, cultural background, availability and accessibility of the food within the locality, occupation and income level of individuals. This confirmed with the view of *Fakayode et al (2008)* who stated that occupation is a primary determinant of the level of consumers income and that income in turn determines the household level of consumption (i.e. consumption is usually hypothesized to be a function of disposable income).

## CONCLUSION

The findings of this study revealed low consumption pattern for majority of the highly nutritious and medicinal leafy vegetables though with high consumption rate for some common vegetables such as tomatoes, onions and pepper. The low consumption level could be ascribed to seasonality of vegetables which affects its accessibility and affordability by the consumers. The findings as perceived by consumers confirmed the health benefits attached to vegetables such as ease toileting and maintaining healthy body structure. To improve the health of the respondents serious nutrition education of respondents is a necessity. This will enlighten them on the health benefits they stand to gain by varied vegetables consumption and thereby reducing the nutritional diseases in our society. To cap it all, formulation of favourable policies by the government that will encourage the farming of vegetable throughout the year and provision of modern storage and preservation technology for accessibility, affordability and availability should be put in place.

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