

Consumption of Fried Foods and Its Related Health Challenges Among Adults Above 50 And Years.

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ABSTRACT

Chronic non-communicable diseases such as diabetes mellitus, stroke, hypertension, coronary heart diseases and obesity are major causes of ill health and mortality globally in recent times. This work was carried out to assess the consumption of fried foods and its related health issues among adults above 50 years in Yaba Local council Development Area of Lagos state to determine commonly consumed foods among adults of this age group and its nutritional consequence. Four hundred respondents were selected from residents of major streets across the LCDA, questionnaires containing food frequency, dietary recall and health status were distributed and descriptive analysis was carried out. Results indicated fried plantain as the most common consumed by 24.3% respondents twice weekly. Fried chicken consumption was more than twice weekly by 18.5% of respondents, 14.5% of total respondents consumed fried beef three times weekly and snail was consumed once in a while by 26%. Frequent consumers of fried foods had more health issues, cholesterol level was lowest among age group 50-60 with 4.5% of respondents. High blood pressure was predominant among 61-70 years with 6.75%, 6.0% of respondents 70 years above had diabetes mellitus. This work supports previous work that high intake of fried foods for individuals above 50 predisposed them to various health problems because of reduced physical activities. It is recommended that individuals all age groups should consume all classes of food in moderate quantities. Cooking methods such as boiling, poaching, steaming be employed rather than frying.

Keywords: Cardiovascular Diseases; Diabetes Mellitus; Food consumption; Fried foods, Obesity.

1. INTRODUCTION

Frying is a unit operation which is mainly used to alter the eating quality of a food. A secondary consideration is the preservative effect that results from thermal destruction of micro-organisms and enzymes, and a reduction in water activity at the surface of the food or throughout the food, if it is fried in thin slices. The shelf life of fried foods is mostly determined by the moisture content after frying: foods that retain a moist interior (for example doughnuts, fish and poultry products which may also be breaded or battered), have a relatively short shelf life, owing to moisture and oil migration during storage. These foods are important in catering applications and are produced on a commercial scale for distribution to retail stores, preserved by chilling and/or gas packing. Foods that are more thoroughly dried by frying, for example potato chips, maize and other potato, snack foods, have a shelf life of up to 12 months at ambient temperature. The quality is maintained by adequate barrier properties of packaging materials and correct storage conditions.

Chronic non-communicable diseases (NCDs), like coronary heart disease (CHD), stroke, hypertension, diabetes mellitus and obesity, are major causes of mortality and morbidity worldwide. NCDs are no longer rich country problems and are a burden in both developed and developing countries (Nishida et-al). The World Health Organization (WHO) projected that chronic diseases will account for almost three-quarters of all deaths worldwide by the year 2020 (World health report 1998). One of the leading risk factors for death and disability in the United States is suboptimal diet quality, which in 2010 was associated with 678,000 annual deaths of all causes (Mozaffarian et-al 2015). Major contributors were insufficient intakes of fruits, nuts/seeds, whole grains, vegetables and seafood, as well as excess intakes of sodium (Mozaffarian et-al 2015). Evidence suggests that excessive consumption of energy-dense foods high in fat, particularly saturated fat, and in refined carbohydrates can lead to weight gain, obesity and pose an increased risk for NCDs. The association between dietary fats and chronic diseases has been extensively studied with evidence indicating that dietary fats play an important role in the development of cardiovascular diseases. Hence, the focus of dietary guidelines has shifted in the last few decades from recommendations of reduced total fat intake to a greater emphasis on the type of fats consumed and the fatty acid profile of the diet.

Major gaps in the current literature on the effects of fried foods include a lack of detailed information on the type of oils used for frying foods, differentiation between the different types of fried foods, frying procedures ,temperature and duration of frying ,how often oils were reused and a lack of consideration of overall dietary patterns. The effects of fried foods consumption at home versus away from home need further evaluation, future research should focus on these gaps and help develop better assessment tools for fried food consumption and their effects on chronic disease.(2011 *fried food consumption and cardiovascular health: A review of current evidence.*)

1.1 Adults Aged 50 And Above

Adults are individuals who are fully grown and have achieved the required levels of maturity. Our required sample space of adults from the age of 50 and above are at this stage in life vulnerable to a host of health issues and diseases especially if they have not lived a good lifestyle health wise, various articles have been written on these required food , activities and care on those within this age group.

2. FAT RELATED HEALTH DISEASES

Fried fish has also been associated with reduced ejection fraction, lower cardiac output and higher systemic vascular resistance in older adults (Gottdiener et-al 2006). Belin *et al* 2011 found that fried fish consumption (greater than 1 serving per week at baseline) was associated with a 48% higher risk of heart failure (HF). Djoussé *et al* 2004 showed a positive and graded association between fried food consumption and incidence of heart failure in a prospective cohort study. Although existing evidence suggests a higher risk of heart failure in people with frequent fried food consumption, underlying biologic mechanisms remain to be elucidated.

Cancer: Numerous epidemiological studies have reported positive associations between total dietary fat or saturated fat and various types of cancer. However, some earlier studies may be less reliable because their analyses did not control for other factors that may affect cancer incidence. Epidemiological research generally investigates factors affecting incidence of a particular kind of cancer. Some dietary nutrients may affect the initiation of tumors or promotion of their growth. These effects may be specific to cancer in one organ or they may promote growth of tumors at several sites within the body.

Dietary fats may alter hormone levels or cause other physiological effects that affect carcinogenesis (Glauert 2000). Physiological responses to high-fat diets may be involved in cancer promotion and in insulin resistance and development of diabetes (Bruce et-al 2000). Data from experimental studies with rats demonstrated that a high-fat diet promoted the development of colon cancer (after chemical initiation) Love joy et-al 2002. Even though these diseases are often studied separately and are discussed in separate sections below, there may be some common physiological mechanisms that underlie them.

Cardiovascular Disease: Cardiovascular disease is a three-stage process involving injury to the inner endothelial cell layer of arteries, buildup of atherosclerotic plaque at the site of injury, and formation of a blood clot that occludes the narrowed arteries. Research indicates that dietary saturated fat may affect progression of plaque buildup and plaque formation. Non-dietary factors that affect the atherosclerotic process include heredity, gender, and general level of aerobic fitness. Saturated fat and heart disease. Numerous epidemiological studies indicate that a higher saturated fat intake is associated with increased incidence of or death from heart disease. Results from a cohort of 1225 men and 1451 women in Great Britain with a total of 155 cardiovascular deaths indicated a strong relationship between dietary fat and mortality from heart disease in women but not in men (Boniface and Teff 2002).

Stroke and hypertension: Dietary saturated fat has been linked to hypertension and to incidence of stroke in some studies. Dietary saturated fats and urinary sodium excretion were positively associated with stroke mortality (Sasaki *et-al* 1995). Serum fatty acids were measured in stored serum samples from 197 Japanese cases of stroke and compared to those in samples from 591 controls. Percentage composition of saturated fatty acids were significantly higher and of unsaturated fatty acid were significantly lower in cases than in controls. These associations remained significant after adjustment for smoking and other cardiovascular risk factors (Iso *et-al* 2002). On the other hand, a study of serum fatty acids in 96 cases of incident stroke and 96 age-matched controls from a U.S. cohort (Multiple Risk Factor Intervention Trial) demonstrated a positive association between stearic acid (but not myristic or palmitic acids) and a negative association between linolenic acid in serum phospholipids and incidence of stroke. Effects of a variety of dietary factors on serum cholesterol and lipoprotein levels were discussed in a comprehensive review in 2002 (Schaefer 2002).

Cholesterol levels: Many studies have demonstrated that levels of serum LDL (low density lipoprotein) cholesterol are correlated with dietary total or saturated fat levels. However, it has also been demonstrated in numerous studies that some individuals do not respond to low saturated fat diets with decreased levels of LDL cholesterol. Populations with high rates of cardiovascular disease often have high LDL and low HDL levels, but this is not always the case. Saturated fat and inflammatory mediators Saturated fat and inflammatory mediators. Saturated fat intake has been associated with serum levels of C-reactive protein and some interleukins that are markers of inflammation. These relationships are not always significant and appear to be stronger in overweight people. Saturated fat and endothelial function.

Obesity: Certainly excess calories from fats will cause weight gain if there is no compensatory increase in exercise to utilize this energy intake. Some data indicate that dietary fat may also affect food intake and fat deposition, but the physiological effects of a high fat diet are complex and depend on an individual's activity level and genetics. During the past two decades there has been a substantial decline in percentage of dietary energy from fat in U.S. diets but a massive increase in the prevalence of obesity. Although some studies report that obesity is associated with high-fat diets, some short-term trials indicate that persons lose weight on both low-fat high-carbohydrate diets and on low-carbohydrate high-fat diets.

Excess calories (from fat or carbohydrate) contribute to weight gain but other lifestyle factors, in particular lack of exercise, are likely to be major factors responsible for the obesity epidemic. **Diabetes:** Intake of potatoes, red meat and other processed meats has been positively associated with the risk of type 2 diabetes (Ylonen *et al* 2012). Data from the Nurses' Health Study/Health Professionals Follow-Up Study revealed a strong association between the frequency of fried food consumption and the risk of type 2 diabetes with adjusted RRs (95% CIs) for individuals who consumed fried foods more than 1, 1-3, 4-6 or 7 times per week (Cahill L.E et al 2014). The frequency of fried food consumption was also associated with the incidence of gestational diabetes (adjusted RR = 2.18 (95% CI: 1.53-3.09) comparing fried food intake of more than 7 times to that of more than once per week) (Baow et al 2014).

3. METHODOLOGY

Food frequency questionnaire was used for data collection since it is believed to be an acceptable channel for arriving at fairly confident significance. A questionnaire was designed to collect Personal data; Food consumption pattern and present health issues and anthropometry assessment was carried out to determine the body Mass index. Blood pressure was also checked with the use of electronic sphygmomanometer checked. Data collected was analysed using simple descriptive analysis such as frequency, percentage, etc.

4. RESULTS AND DISCUSSION

Table 1 below shows the demographic data of the respondents where 50% are male and 50% female. Among the age groups, 30.75% of the respondents are between age 50-60, 36.75% of the respondents are within the age 61-70 and 32.5% of the respondents are 70 and above. Also from the table, 56.5% of the respondents are Christians, 39.3% of the respondents are Muslim and 4.3% of the respondents are traditionalist. Among the ethnic group, 10.8% of the respondents are Hausa, 24% of the respondents are Igbo, 21.3% of the respondents fall on the other ethnic group. The table finally shows the monthly income of respondents, from the table, 14% of the respondents earn below N50,000 monthly, 26% of the respondents earn N51,000- N200,000, 29% of the respondents earn N201,000-N500,000 and 31% of the respondents earn between N501,000 and above.

Table 1 below shows the demographic data of the respondents where 50% are male and 50% female.

GENDER	FREQUENCY	PERCENT
Male	200	50.0
Female	200	50.0
Total	400	100.0
AGE	FREQUENCY	PERCENT
50-60	123	30.75
61-70	147	36.75
71 & ABOVE	130	32.5
Total	400	100.0
RELIGION	FREQUENCY	PERCENT
Christianity	226	56.5
Islam	157	39.3
Traditionalist	17	4.3
Total	400	100.0
ETHNICITY	FREQUENCY	PERCENTAGE
Hausa	43	10.8
Igbo	96	24.0
Yoruba	176	44.0
Others	85	21.3
Total	400	100.0
MONTHLY INCOME	FREQUENCY	PERCENTAGE
BELOW 50,000	56	14.0
51,000-200,000	104	26.0
201,000-500,000	116	29.0
501,000 AND ABOVE	124	31.0
Total	400	100.0

Table 2: Below, shows the frequency distribution of respondents' intake of Fried egg and variety of fried foods

INTAKE OF FRIED EGG	FREQUENCY	PERCENT
ONCE A WHILE	57	14.3
NEVER	78	19.5
ONCE A MONTH	98	24.5
ONCE A WEEK	66	16.5
TWICE A WEEK	42	10.5
MORE THAN TWICE A WEEK	59	14.8
Total	400	100.0
INTAKE OF FRIED YAM	FREQUENCY	PERCENT
ONCE A WHILE	38	9.5
NEVER	79	19.75
ONCE A MONTH	115	28.75
ONCE A WEEK	52	13
TWICE A WEEK	36	9
MORE THAN TWICE A WEEK	80	20
Total	400	100
INTAKE OF FRIED PLANTAIN	FREQUENCY	PERCENT
ONCE A WHILE	72	18.0
NEVER	63	15.8
ONCE A MONTH	60	15.0
ONCE A WEEK	48	12.0

Table 2 below, shows the frequency distribution of respondents' intake of Fried egg and variety of fried foods. From the table, 14.3% ate Fried egg once a while, 19.5% of the respondents do not eat Fried egg at all, 24.5% of the respondents ate Fried egg once a month and 16.5% of the respondents ate fried egg once a week, 10.5% of the respondents takes fried egg twice a week and 14.8% of the respondents ate fried egg more than twice a week. Furthermore the table shows the frequency distribution of respondents' intake of Fried plantain. From the table, 18% ate Fried plantain once a while, 15.8% of the respondents do not eat Fried plantain at all, 15% of the respondents ate Fried plantain once a month and 12% of the respondents ate fried plantain once a week, 24.3% of the respondents ate fried plantain twice a week and 15% of the respondents ate fried plantain more than twice a week.

The table also shows the frequency distribution of respondent's intake of Fried rice. From the table, 12.3% ate Fried rice once a while, 24.5% of the respondents do not eat Fried rice at all, 27.3% of the respondents eats Fried rice once a month and 20.5% of the respondents ate fried rice once a week, 9.8% of the respondents ate fried rice twice a week and 5.8% of the respondents ate fried rice more than twice a week.

Table 3 below shows the current health conditions among age groups. Age group 50-60, 29 people claim to be health, 14 people have high blood pressure, 18 people is suffering from high cholesterol level, 20 people are suffering from obesity, 6 persons have diabetes, 8 people are suffering from stroke, 13 people are suffering from high blood sugar and 15 people are suffering from other illnesses. Among age group 61-70, 36 people claim to be ok, 27 people have high blood pressure, 24 people is suffering from high cholesterol level, 21 people are suffering from obesity, 14 persons have diabetes, 13 people are suffering from stroke, 6 people are suffering from high blood sugar and 6 people are suffering from other illnesses.

Among age group 71 and above, 22 people claim to be ok, 20 people have high blood pressure, 25 people is suffering from high cholesterol level, 14 people are suffering from obesity, 24 persons have diabetes, 6 people are suffering from stroke, 8 people are suffering from high blood sugar and 11 people are suffering from other illnesses.

Consumption of fried meat was positively associated with general obesity in men, and the intake of fried fish was associated with general obesity in women. The same pattern was observed for central obesity. In addition, consumption of fried egg was associated with central obesity in men (Ghosh A, Bose K, Das Chaudhuri AB. Association of food patterns, central obesity measures and metabolic risk factors for coronary heart disease (CHD) Bengalee Hindu men, Calcutta, India. (2003) Asia Pac Journal of Clinical. Nutrition. 2003;12:166-71.

Table 3 below; **Distribution of current health conditions among age groups**

AGE OF THE RESPONDENTS	CURRENT HEALTH CONDITIONS								Total
	OK	HIGH BLOOD PRESSURE	HIGH CHOLESTEROL LEVEL	OBESITY	DIABETIES	STROKE	HIGH BLOOD SUGAR	OTHERS	
50-60	29	14	18	20	6	8	13	15	123
61-70	36	27	24	21	14	13	6	6	147
71 & ABOVE	22	20	25	14	24	6	8	11	130
Total	87	61	67	55	44	27	27	32	400

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	29.234 ^a	14	.010
Likelihood Ratio	29.548	14	.009
Linear-by-Linear Association	.126	1	.722
N of Valid Cases	400		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 8.30.

TABLE 4 above: Chi-square analysis

Hypothesis

H₀: there is no significant effect of age group 50 above on their health situation

H₁: there is significant effect of age group 50 above on their health situation

COMMENT: from the chi-square table above, it is observed that the p-value (0.010) is less than 0.05; test at 95% confidence interval, the chi-square decision rule state that we reject H₀ if the p-value is less than 0.05. Therefore we reject H₀ and then we conclude that there is significant effect of age group 50 and above on their health situation.

5. CONCLUSION

The research work has shown that very high intake of fried foods especially for the studied age group of 50 and above predispose them to various health problems such as cardiovascular diseases, obesity, high blood pressure etc., due to their age their bodily functions and activities are reduced and thus it makes them susceptible to various health issues. The sample space of the 400 individual used for this research work have shown that unregulated intake i.e. high intake of fatty foods cannot only cause various health issues but also complicate current ones.

High number of the respondents who consumed fatty foods regularly had more health issues than those who consumed comparably less fatty foods, the exception being those who recently changed their diet to improve their health status. From the above it is highly recommended that individuals of all age groups should consume all classes of food in moderate quantities. The food pyramid, food plate and other dietary aids should be employed to achieve a healthy life. The analysis of food and nutrient intake by adults make it clear that special effort will be needed to both provide and encourage intake of more fruit ,vegetable ,low-fat dairy products ,and whole grains while limiting exposure to and consumption of foods high in sugar, solid fats, and sodium and of refined grains.

The effects of fried foods consumption at home versus away from home need further evaluation future research should focus on these gaps and help develop better assessment tools for fried foods consumption and their effects on chronic diseases. Special consideration should be given to those sample age group at their age they are easily susceptible to different health problems and thus must consume additional care to live a healthy life. They should consume fruits and vegetable, fibre in regulated and stipulated quantity along with other classes of foods they should also exercise as much as possible nutritional supplements can also be taken.

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