NUTRITIONAL STATUS AND DIETARY PATTERN OF ADULTS IN BIDA LOCAL GOVERNMENT AREA OF NIGER STATE, NIGERIA

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Abstract

The study was conducted to assess the nutritional status and dietary pattern among adults in Bida Local Government Area, Niger State. A cross sectional study was conducted among 210 adults between the ages of 18-65 years. The study population comprised of 111 (52.91%) female and 99 (47.1%) male respectively. Food frequency questionnaire (FFQ) was used to collect data on dietary habits of the respondents. Results obtained revealed that 38 (18.1%) of the respondents within the age 30-39 years were overweight and 72% of the respondents are having a waste circumference that is above the normal range. High prevalence of unhealthy eating habits was recorded among the respondents. The study also revealed that, 52%, 44% and 40% consumed milk and dairy products, egg and confectionary (snacks) respectively, thrice weekly while fruits (25.7%) and vegetables (14.3%) consumption at least 7 times in a week was low. Tobacco use among the respondents between the ages of 30-39 years was 47.5% which indicates a high level of its use. The study demonstrated a high prevalence of unhealthy eating habit and life style changes. Intervention programme by health professionals are needed to reverse the trend particularly with special focus on promotion of healthy eating and physical activity.

Keywords: nutritional status, dietary pattern, physical activities, lifestyle

Introduction

The major causes of mortality in developed and developing countries of the world are diseases in which nutritional lifestyle plays an important role (Shehu *et al*., 2011). The choice of what people eat are determined by various factors such as religions, customs and socio-economic differences (Shehu *et al*., 2011). The environments in which the individuals live also affects their lifestyles. Changing these factors in the direction of nutritional lifestyle patterns could postpone the onset of permanent morbidity, disability, disease occurrences and death; and could have a major effect on quality of life (Waijers *et al*., 2006). Malnutrition refers to either inadequate intake of nutrients due to lack of food, ignorance, socio-cultural factors, and diseases among other causes, resulting in underweight and other nutrient deficiency diseases; or intake of nutrients in excess of body requirements due to poor dietary habit (erroneously perceived as a sign of affluence), resulting in overweight and obesity. Poor diet (high consumption of sugar, salt, saturated fat, etc) and unhealthy lifestyle (smoking, alcohol consumption and physical inactivity) have been identified as major risk factors of cardiovascular disease and other non-communicable diseases (NCDs). According to the World Health Organization (WHO, 2009) estimates, 36 million out of the 57 million deaths (almost two thirds) that occurred globally in 2008 were due to non-communicable diseases (NCDs), comprising mainly of cardiovascular diseases, cancers, diabetes mellitus and chronic lung diseases (WHO, 2009).

Food choice is an important determinant of people quality of life. Poor or unbalanced diets as in the case of excessive eating and undernutrition, are risk factors for several chronic diseases (Haveman *et al*., 2003). Poor food intake reduces the level of nutrients in the body thereby exposing the individual to nutritional health related problems (Haveman *et al*., 2003). The choice of good nutrition is not only important in preventing health problems and promoting active living, but it is a critical part of managing diseases among those who are infected or sick (Haveman *et al*., 2003). The change in lifestyle has brought about a dramatic nutrition transition characterized by a decrease in the consumption of traditional foods and an increasing reliance on refined foods (Mead *et al*., 2010; Sharma *et al*., 2010). There is significant and valid concern for the health implications of consuming increased amounts of these fat- and sugar-rich foods (Kuhnlein *et al*., 2004).

The current burden of chronic disease reflects the cumulative effects of unhealthy lifestyles and the resulting risk factors over the life span of people. Three decades ago, the food available was mostly fresh and grown locally (Marcola, 2014). Trends in food availability in households in the last three decades reveal that diverse traditional foods have been replaced by industrialized convenience foods (Levy-Costa *et al*., 2005). Traditional foods consumed by people over a long period of time, play an important role in establishing local identity, culture, and custom, and they transfer cultural heritage from generation to generation (Inamdar *et al*., 2005; Albayrak & Gunes, 2010). Therefore, there is an ardent need to study the dietary patterns (which is the quantity, variety or combination of different foods and beverages in a diet and the frequency with which they are habitually consumed) of local people and also assess their health status as this will be useful in policy planning and understanding trends to reduce most diseases of affluences. The objectives of this study are to assess the nutritional status and dietary pattern of adults in Bida LGA of Niger State, Nigeria.

Methodology

Study Area

The study was conducted in Bida LGA of Niger state with a population of 185,553 (NPC, 2006). The study population comprise primarily of adults (18-65 years) in Bida LGA.

Sampling Method

The method of Thrusfield (2005) was used to determine the sample size. Therefore, a total of 210 adults comprising of 111 females and 99 males were randomly selected from all the 14 wards in Bida LGA. Systematic random sampling was use to select eligible respondents in the fourteen (14) wards in Bida LGA.

Data Collection

Based on the objectives of the study, data was collected using a semi-structured questionnaire consisting of the following sections: Socio-economic and demographic Information, dietary intake/food consumption pattern and anthropometric measurements (BMI, waist circumference). An un-quantified Food Frequency Questionnaire (FFQ) was used to collect dietary information from the subjects. The frequency of eating different type of food was categorized into four groups (7 or more times, 4 to 6 times, 2 to 3 times and 1 or less time per week). Weight and height were determined according to standard anthropometric methods (ISAA, 2006). Values obtained were used to assess level of malnutrition by comparing to the Body Mass Index (BMI) standard ranges for adults and the average was taken. Measurement of waist circumference was done according to the procedures outlined by WHO (2010) using a

flexible double-graduated tape measured to the nearest 0·1 cm, the top of the hip bone and the bottom of the ribs were located (level of the umbilicus). Participants were asked to breathe out normal and the tape was placed mid-way between the identified points then the measurement was taken.

Data Analysis

The data obtained were presented in tabular form and were analyzed by means of percentage distribution and/or frequency.

Results and Discussion

Waist Circumference of the Respondents in Bida LGA

The percentage distribution of the waist circumference of the respondents in Bida LGA is as presented in Table 1. The waist circumference distribution was divided into two groups; *Normal* and *Above normal*. While the *Normal* for female is ≤88cm that of male is ≤102cm. Also, while the *Above* for female is >88cm, that of male is >102cm. Thus, it was observed from the results that 49.5% of the respondents are having a *Normal* waist circumference while 50.5% of the female are having *Above* waist circumference. For the male, it was observed that 64.7% are having a *Normal* waist circumference while 35.3% are having *Above* waist circumference. Also, for the female, it was observed that 36% are having a *Normal* waist circumference while 64% are having *Above* waist circumference. The high occurrence of *Above* waist circumference noted among the females may be due to accumulated fat during pregnancy. This finding further confirms the observation recorded on BMI.

Table 1: Percentage distribution of waist circumference of the respondents in Bida LGA

Waist Circumference Classification	% Distribution of Respondents		
	Male (n=99)	Female (n=111)	Total n = (210)
Normal *Men (≤102cm)* *Women(≤88cm)*	64.7	36.0	49.5
Above *Men (>102cm)* *Women(>88cm)*	35.3	64.0	50.5

Dietary Pattern of the Respondents in Bida LGA

Table 2 shows the percentage frequency of intake in dietary pattern of the respondents in Bida LGA. It was observed that 25.7% and 14.3% of respondents consumed fruits and vegetables respectively at least once per day; and 11.9% of respondents took vitamin supplements at least once per day. It was also observed that almost half (41%) of the respondents consumed animal meat at least once daily including about 13% also consuming eggs daily. High prevalence of unhealthy eating habits was recorded among the participants in this study. Also, a relatively high prevalence of animal protein intake (41.4%) among the participants was observed. The low prevalence of consumption of fruits and vegetables among the participants in this study is of serious concern. This compares with the study of Awosan *et al.* (2013) that reported high level of participants that eat fruits (56.0%) and vegetables (58.8%) less than three times in a week.

Table 2: Percentage frequency of intake in dietary pattern of respondents in Bida LGA

Food Type	% Frequency of Intake (n=210)			
	≤ 1 time /week	1-3 times/week	4-6 times/week	≥ 7 times/week
Milk and Dairy Products	19.0	51.9	25.7	3.3
Meat, Fish and Poultry	16.2	20.0	22.4	41.4
Eggs	18.1	44.4	24.8	12.9
Cereals and Legumes	8.6	29.0	36.2	26.2
Fruits	9.0	26.2	39.0	25.7
Vegetables	13.8	27.1	44.8	14.3
Pasta and Bread	9.5	19.5	33.8	37.1
Confectionary	24.3	40.0	19.5	16.2
Soft Drinks	17.6	26.7	36.2	19.5
Coffee and Tea	16.2	42.9	29.5	11.4
Vitamin Supplements	38.1	18.6	31.4	11.9

Body Mass Index of the Respondents in Bida LGA

The percentage distribution of the Body Mass Index (BMI) of the respondent in Bida LGA of Niger State is as presented in Table 3. The BMI was distributed into six (6) groups namely; underweight, normal, overweight, Class I obesity, Class II obesity and Class III obesity, according to the WHO reference standard for BMI for Age. It was observed from Table 3 that about 30% and 27.6% of the respondents were over-weight and obese class I respectively with the highest frequency in the females. It was also noted that more than two third of the respondents fall within the range of overweight, Class I, Class II and Class III obesity with the female having the highest frequency. The high prevalence of overweight (30%) and Class I obesity (27%) recorded in this study is similar to previous report by Balogun and Owoaje (2007), on prevalence of overweight and obesity among female traders in Ibadan, Nigeria. This could be related to the high prevalence of unhealthy eating habits among the participants in this study. Studies have also shown that attitudinal and cultural changes are associated with obesity (Patel, 2009). Nutritional status is an integral component of the overall health of an individual (Som *et al.*, 2007), and is an indicator of the well-being of individuals (Dutta *et al.*, 2009) living in a particular region. In this regard, the importance of the nutritional status of adults in the developing countries should be emphasized, not only for the improvement of health, but also for the overall development of the concerned region in near future (Rao *et al.*, 2005). In a similar work by Nancy *et al.* (2008), the outcome of their study showed that prevalence of obesity has increased in all ages and according to Marais and Labadarios (2007), obesity is associated with increase in mortality and contribute to many chronic diseases.

Table 3: Percentage distribution of body mass index of the respondents in Bida LGA

Classification (kg/m^2)	% Distribution of Nutritional Status		
	Male (n=99)	Female (n=111)	Total (n = 210)
Underweight (BMI <18.5)	1.8	0.5	2.4
Normal (BMI = 18.5 - 24.99)	9.9	9.6	19.5
Overweight (BMI = 25.0 -29.99)	14.5	15.5	30.0
Class I obesity (BMI = 30.0 – 34.99)	13.5	14.1	27.6
Class II obesity (BMI = 35.0 – 39.99)	6.8	5.6	12.4
Class III obesity (BMI ≥ 40.00)	3.2	5.0	8.1

Conclusion

Overweight and central obesity were noted to be generally high among adults in Bida LGA, Niger State. Over 38% of the adult population in Bida LGA are either overweight or obese which had led to a high prevalence of non-communicable diseases (overweight and obesity). Other lifestyle factors such as sedimentary lifestyles were noted to be generally high especially among female in Bida.

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