

PERCEIVED DIETARY PATTERN AND EXISTING NON COMMUNICABLE DISEASES AMONG PEOPLE LIVING IN EGOR AND OVIA NORTH EAST LOCAL GOVERNMENT AREA OF EDO STATE, NIGERIA

Salami, L. I.,¹ Oyegunwa, O. R.² and Ihensekhien, Isoken¹

¹ Department of Vocational and Technical Education, Faculty of Education, University of Benin, Benin City, Edo State

² Federal College of Education (Technical) Akoka, Yaba Lagos State School of Vocational Education Department of Home Economics

*corresponding author: isoken.ihensekhien@uniben.edu

ABSTRACT

Background: Poor dietary pattern and increased consumption of processed foods, use of alcohol and physical inactivity are the leading cause of increased prevalence of non-communicable diseases (NCDs) in Nigeria, affecting people of all age group.

Objective: The study examined the perceived dietary pattern and existing NCDs among people living in Egor and Ovia North East Local Government Area of Edo State.

Method: Survey research design was adopted for the study. A total of four hundred and seventy five thousand, six hundred and forty three (475,643) make up the population. Multistage sampling technique was used in selecting a sample size of two hundred and fifty (250) respondents in the local government area (LGA). Structured questionnaire was used for data collection and cronbach alpha method was used to establish the reliability of the instrument, a coefficient of 0.81 was obtained. The questionnaire was administered and collected; Four (4) research questions guided the study. Data collected was statistically analyzed using descriptive statistics such as frequencies, percentages, mean, and standard deviation. The null hypotheses was tested using Pearson Product Moment Correlation Statistics at 0.05 level of significance at which null hypotheses was either accepted or rejected. In determination of the level of nutrition knowledge and food consumption pattern, scores of 50% and above was regarded as positive knowledge while daily consumption of food from the five food groupings was regarded as having good dietary pattern.

Result: Findings showed that respondent sources of information was the radio/television, respondent also had good nutrition knowledge. It was also revealed that hypertension and obesity was the most prevalent non communicable diseases among the people, and dietary pattern significantly influenced NCDs among the people.

Conclusion: Dietary pattern significantly influence prevalence of NCDs among the respondents despite the good level of nutritional knowledge of the respondents.

Keywords: *Dietary pattern, non-communicable diseases, perceived.*

INTRODUCTION

Nutrition is a vital physiologic process necessary for the development and maintenance of the human body, its organs, and its physiological processes. In order to maintain good health, individuals' daily intake must meet with the recommended dietary allowance. The daily requirements of these nutrients vary depending on individuals' age, sex, and physiologic state [1]. Foods eaten and the pattern of consumption affect such individual's health.

Food consumption patterns are recognizable ways people prepare and consume foods. Factors that influence food consumption choices among individuals and populations include cultural, social,

and economic factors [2]. It is an individual's eating behavior that is developed over the years which may be influenced by physiological and socio-economic factors such as mother's nutritional knowledge, mothers' educational status, mother's income, mothers' occupation, meal structure, culture, ethnicity, religion and food available [3]. Food consumption pattern cultivated from childhood is an important determinant of nutritional status outcomes at the later stages of life. Certain dietary patterns may place individuals at risk of chronic diseases, such as cardiovascular disease, diabetes, and cancer. Diets rich in saturated fat and low in fruits and vegetables are associated with heart disease, cancer, and

diabetes, while diets rich in fruits and Vegetables protect individuals from these conditions [3]. Consuming predominantly plant-based diets reduces the risk of developing obesity, diabetes, cardiovascular diseases, and some forms of Non communicable diseases (NCD). Plant-based diets are high in vegetables and fruits, whole grains, pulses, nuts and seeds, and have only modest amounts of meat and dairy. These diets help to achieve and maintain a healthy weight, reduce blood pressure, and are also good sources of dietary fiber (which protects against colorectal cancer) [4].

World Health Organization [5] defined non-communicable diseases as diseases of long duration and generally slow progression. Also known as chronic or life style diseases, they are not easily transferable from one person to another either through direct contact or vectors. The four main types of non-communicable diseases are cardiovascular diseases (like heart attacks and stroke), cancer, chronic respiratory diseases (such as chronic obstructed pulmonary disease and asthma) and diabetes.

People of all age groups, regions and countries are affected by NCDs. These conditions are often associated with older age groups, but evidence shows that 15 million of all deaths attributed to NCDs occur between the ages of 30 and 69 years. Of these "premature" deaths, over 80% are estimated to occur in low- and middle-income countries. Children, adults and the elderly are all vulnerable to the risk factors contributing to NCDs, whether from unhealthy diets, physical inactivity, and exposure to tobacco smoke or the harmful use of alcohol [6]. Globally, increased consumption of processed food containing excess amounts of sugar, salt, saturated and trans fats are compounded by low intakes of healthy foods like fruit and vegetables, whole grains, nuts, pulses and seafood. According to Hanson et al., [7] Non communicable diseases (NCDs) kill more than 31 million people each year in low income countries. Some 80% of all NCD deaths occur in low- and middle-income countries. NCDs, particularly cardiovascular diseases, common cancers, respiratory diseases, diabetes and dementia, are a common cause of disability [8].

Afolabi et al, [8] cited that Non-communicable diseases (NCDs) in Nigeria accounted for an estimated 28 per cent of all mortality in 2008. The most prevalent NCDs in Nigeria are cardiovascular diseases, which accounted for 12 per cent of total deaths across all age groups in 2008. Poor dietary practices are major contributors to the development of chronic non-communicable diseases as reiterated by WHO [9, 10]. Egor and Ovia north local government area (LGA) are one of the largest LGA in Edo State where there lots of attractions and

residents chose to live large resulting in lifestyles and dietary habits close to the western world. Their lifestyle practice can be referred to as nutrition transition [9, 11]. Goodman et al., [12] stated that most chronic diseases in adulthood originate from dietary practices which are mainly formed during childhood. While Hwenda [13] pointed out that promote healthier eating habits, nutrition perception/knowledge is believed to be important. However, nutrition perception/knowledge alone may not be sufficient to change dietary habits hence in addition there is need to investigate their perceived dietary pattern and existing non- communicable diseases toward healthy eating and longevity of life. With the current in-flow of information on "foods" on prints and non-prints, there is therefore greater need to investigate their perceived dietary pattern and existing non- communicable diseases among people living in Egor and Ovia North East Local Government area of Edo State in guiding the people for making proper food choices and practices in reality.

The objective of the study was to examine the nutrition knowledge, perceived dietary pattern and existing non communicable diseases among people living in Egor and Ovia North Local Government Area of Edo State, Nigeria. The study also determine the if dietary pattern significantly influence prevalence of non-communicable diseases

Methodology

The study was conducted in Egor and Ovia North East Local Government area of Edo State. The study was a cross sectional and descriptive in design. There are 14 electoral wards in both LGA. The population of the study consisted of all adults resident in Egor and Ovia North East LGA of Edo State. The local government area has an estimated population of 475,643, Census [2006]. Multi-stage sampling technique was employed in selecting the four wards for the study. From the 14 Electoral wards in the LGA, 4 electoral wards (Wards 2 and 5 from Egor and 1 and 7 from Ovia North East) were randomly selected. Household listing was done in the 4 electoral wards and from the listing, 250 adult (35 years and above) respondents were systematically selected across the wards. Willingness and voluntary participation of the respondent were sought and they were assured of confidentiality.

Data collection

A validated and pretested structured questionnaire was used to collect information from the respondents. This was pretested by administering the questionnaire to twenty (20) adults who were part of the population but not of the respondents used in the study. The data collected was analyzed using Cronbach alpha; a reliability coefficient of 0.81 was obtained. The

instrument was divided into two sections. Section A was on demographic characteristics while section B of the questionnaire was used to collect information on perceived dietary pattern and existence of non-communicable diseases. Two briefed research assistants helped in data collection.

Method of Data Analysis:

Data collected was statistically analyzed using descriptive statistics such as frequencies, percentages,

mean, and standard deviation. The null hypotheses was tested using Pearson Product Moment Correlation Statistics at 0.05 level of significance at which null hypotheses was either accepted or rejected. In determination of the level of nutrition knowledge and food consumption pattern, scores of 50% and above was regarded as positive knowledge while daily consumption of food from the five food groupings was regarded as having good dietary pattern.

Results

Table 1 revealed that 41.2% of the respondents were males, 58.8% females, 68.8% are between 35-45 years old, 62.4% are married, 80.0% have tertiary educational qualification. 39.2% are civil servants, 35.2% are manual workers, 70.8% engage in high physical activity, and 83.6% goes to work on transport.

Table 1: Socio-Demographic Characteristics of Respondents. N=250

Items	Frequency	Percentages %
Gender		
Male	103	41.2
Female	147	58.8
Age		
35-45years	172	68.8
46-55 years	54	21.6
56-65years	15	6.0
above 65	9	3.6
Marital Status		
Single	79	31.6
Married	156	62.4
Divorced	1	.4
Separated	8	3.2
Widow	6	2.4
Educational Level		
No formal Education.	7	2.8
Primary	7	2.8
Secondary	36	14.4
Tertiary	200	80.0
Job Status		
Self-employed	89	35.6
Unemployed	33	13.2
Civil servant	98	39.2
Pensioner	15	6.0
Others	15	6.0
Job activities		
Sedentary	58	23.2
Manual	88	35.2
Others	103	41.2
Level of physical activity		
Engage in high physical activity	177	70.8
Engage in moderate physical activity	70	28.0
Engage in low physical activity	03	01.2
Means of transportation to Hospital/work:		
Vehicular	13	5.2
transport	209	83.6
Trekking	28	11.2

Table 2 revealed sources of dietary/ nutritional information to be radio/television 20.4%, formal education 18.4%, print media 3.2%, social media 4.8%, doctors/nurses 5.6%, families and friends 6.8%, nutritionist/Dietician 4.4%, all of the above 36%.

Table 2: sources of dietary/ nutritional Information

Variable	F	%
Media e.g. Radio and television	51	20.4
Print Media	8	3.2
Social media e.g. Whatsapp, facebook	12	4.8
Doctors/ Nurses	14	5.6
Formal Education	46	18.4
Other paramedics	1	.4
Families and friends	17	6.8
Nutritionist/Dietician	11	4.4
All of the above	90	36.0

Table 3 revealed that all items on level of nutritional knowledge had responses ranging from 71.2% to 96%. Thus indicating that the respondent have good knowledge of adequate nutrition because their responses is above 50% set as the benchmark for having good nutrition knowledge.

Table 3: Frequencies, Percentages, Mean ratings and Standard Deviation of respondent on level of nutritional knowledge

Variable	Yes (%)	No (%)	X	SD
I use good oil from good source for my cooking, I don't use saturated fatty acids and industrially produced trans fats (i.e. partially hydrogenated vegetable oils or oil that solidify at room temperature),	214(85.6)	36(14.4)	1.14	0.35
It is important to reduce excess salt consumption especially when added on the table	231(92.4)	19(7.6)	1.08	0.27
A healthy diet is one diet throughout the life-course which prevent malnutrition in all its forms as well as a range of non-communicable diseases (NCDS) and conditions	231(92.4)	19(7.6)	1.08	0.27
Make-up of a healthy, balanced diet varies depending on the individual needs, such as age, sex, lifestyle, degree of physical activity,	225(90.0)	25(10)	1.10	0.30
I am aware that a healthy diets for adult contains fruits, vegetables, legumes, nuts and whole grains,	240(96.0)	9(3.6)	1.05	0.27
I am aware that the diet should be limited in free sugars, salt, total fats, saturated fats and free of industrial trans-fats	197(78.8)	53(21.2)	5.65	3.14
I am aware that my dietary pattern could have influence on my present disease state	178(71.2)	72(28.8)	2.21	1.15
I heard about Non Communicable Diseases before now	221(88.4)	29(11.6)	2.41	1.27

Figures in parenthesis are in percentages

Table 4 revealed that 101(40.4%) of the respondents take Cereal 1-3 days/week, 93(37.2%) take Roots and Tuber 1-3 days/week, 107(42.8%) takes Fats and oil Everyday/week, 89(35.6%) takes Legumes, Nuts and seeds 1-3 days/week, 95(38.0%) takes Milk and milk Product occasionally, 114(45.6%) takes Fried/ Fatty foods/ fast foods occasionally, 94(37.6%) takes Meat and Meat product Everyday/week, 114(45.6%) takes Sweetened Beverage and sugar occasionally, 110(44.0%) consume alcohol occasionally, 74(29.6%)takes Fruits 1-3 days/week, and 92(36.8%) skip meals 4-6 days/week.

Table 4: Frequencies, Percentages, Mean ratings and standard deviation of respondent on dietary pattern among patients

Variables	Number of Times Taken Weekly				
	1-3 dys/wk	4-6 dys/wk	Evday/wk	Occasionally	Never
Cereals: (rice, bread, pap (ogi), wheat, Semolina, instant noodles and custard).	101(40.4)	53(21.2)	65(26.0)	29(11.6)	2(0.8)
Roots and Tuber: (Boiled yam, pounded Yam, fufu, starch, garri, potatoes(sweet) Yam pottage	93(37.2)	62(24.8)	44(17.6)	51(20.4)	0(0.0)
Fats and oil: (Margarine, butter, lard, palm Oil, vegetable oil, groundnut oil)	53(21.2)	41(16.4)	107(42.8)	44(17.6)	5(2.0)
Legumes, Nuts and seeds: Beans, Akara, Moinmoin, soya beans	89(35.6)	49(19.6)	37(14.8)	71(28.4)	4(1.6)
Milk and milk Product: Evaporated milk Powdered milk, yoghurt, ice cream, cheese	64(25.6)	46(18.4)	42(16.8)	95(38.0)	3(1.2)
Fried/ Fatty foods / fast foods: (fried yam, fried Yam, egg roll, fried fish, fried plantain, Potatoes, chinchin, doughnut, puff-puff, Meat pie, sausage, fried meat, yam balls.	68(27.2)	36(14.4)	29(11.6)	114(45.6)	3(1.2)
Meat and Meat product: Poultry ,Slaughtered live, Beef and Offals Slaughtered live, Frozen Fish	63(25.2)	45(18.0)	94(37.6)	46(18.4)	2(0.8)
Sweetened Beverage and sugar: Cocoa drink, coke, Fanta, teem Viju, lacasera, Pepsi, juice, sugar	69(27.6)	31(12.4)	31(12.4)	114(45.6)	5(2.0)
Alcohol Consumption	21(8.4)	12(4.8)	18(7.2)	110(44.0)	89(35.6)
Fruits: Drupe (Mango, Guava, Peach etc.) Berries, Banana, Grapes, Oranges, Cucumber, Pome (Apple, Pear etc.)	74(29.6)	55(22.0)	72(28.8)	47(18.8)	2(0.8)
Skipping meals	70(28.0)	92(36.8)	83(33.2)	5(2.0)	0(0.0)

Table 5 revealed that 41(16.4%) of the respondents are hypertensive, 31(12.4) are obsessed, 25 (10.0%) peptic ulcer, 22 (8.8%) with cardiovascular diseases, 29 (11.6%) diabetic, another 10 (04.0%) anemic, 8(3.2%) with arthritis and 95(38.0%). This finding revealed that the most prevalent non- communicable disease, hypertension (12.4%) followed by Obesity 31 (12.4) and diabetics 29(11.6)

Table 5: Descriptive Statistics on Prevalence of Existing Non Communicable Diseases among respondents

Variables	Frequency	Percentages (%)
Obesity	41	12.4
Peptic Ulcer	25	10.0
Diabetes	55	11.6
Arthritis	28	3.2
Hypertension	51	16.4
Anemia	10	4.0
Cardiovascular diseases	22	8.8
Cancers	18	7.2
Total	250	100

Hypothesis: Dietary pattern will not significantly influence non communicable diseases among people living in Egor and Ovia North Local Government Area of Edo State, Nigeria.

Table 6 shows an r-value of -0.106 and a P-value of 0.096 testing at an alpha level of 0.05, the p value is greater than the alpha level. ($p > 0.05$) therefore, the null hypothesis which states that “Dietary pattern will not significantly influence prevalence of non-communicable diseases among people living in Egor and Ovia North Local Government Area of Edo State, Nigeria” is retained. Consequently, Dietary pattern does not significantly influence prevalence of non-communicable diseases among people living in Egor and Ovia North Local Government Area of Edo State, Nigeria

Table 6: Pearson Product Moment Correlation Statistics on influence of Dietary pattern on prevalence of non-communicable diseases

Variables	N	X	SD	r	Sig.p (2tailed)	Remark
Dietary pattern	250	30.6640	5.51951	-0.106	0.096	NS
prevalence of non-communicable diseases		6.57	2.937			

$\alpha=0.05$

DISCUSSION

The study examine Perceived dietary pattern and existing non communicable diseases among people living in Egor and Ovia north east local government area of Edo state. Majority of the respondent were women and 39.2% are civil servants, 35.2% are manual workers, 65.2 % spent of the respondent spend 8-10 hours at work, about 70.8% engage in high physical activity. Media e.g. radio and television was the major source of dietary/nutritional information. The frequency of social media usage was tied to global development fact that majority of the respondents were civil servant skilled. Almost all the social media devices were used often by the respondents except. This finding is in agreement with the study of Campell [14] who reported that; social media is the common way of giving and receiving information. Findings of research question one revealed that the respondents level of nutritional knowledge is high as table 2 revealed that they are aware of most nutritional etiquette that can help their nutritional status and prevent non-communicable diseases. This corroborates the finding of Vorster and Gibney [15] who reported that diet is considered a modifiable risk factor for NCDs. The above is in consonance with Norman et al, [16] that stated that over recent years dietary assessment has moved away from single nutrients to assessing the whole diet and interrelations between dietary factors in relation to NCDs the study also revealed that the most prevalent non-communicable diseases in the study area is Hypertension (12.4%) followed by Obesity 31 (12.4%) and cancer 29(11.6%) This agreed with Ministry of Health [17] who by ranking the NCDs, all the groups reported that high blood pressure (hypertension) was the most common of all the NCDs. This is also in consonant with Bloom et al, [18].

Studies have shown that lifestyle pattern influences prevalence of non communicable diseases [9] however this study revealed that dietary pattern significantly influenced non communicable diseases among people living in Egor and Ovia North East Local Government Area of Edo State, Nigeria. This is in consonant with Haregu et al, [19] who discovered that obesity is a result of combined effects

of unhealthy diet and insufficient physical activity (lifestyle).

Conclusion

The study concluded that dietary pattern significantly influence prevalence of non communicable diseases among the respondents despite the good level of nutritional knowledge of the respondents. It is therefore obvious that the respondent do not practice healthy dietary pattern.

Recommendations

1. There is a need to strengthen the existing efforts towards the prevention and management of NCDs among people in the study area and Nigeria in general,
2. There is the need for sensitization and awareness creation among the population. This could be done using different access channels such as Radios, TVs, Posters, and going to communities for health talks about NCDs prevention and routine checkups,
3. Outreaches and mobile clinics could be established where experts can be taken to give health talks and afterwards carry out screening for those who are willing.

REFERENCES

1. Gale, T. (2008). International encyclopedia of the social sciences. Retrieved from encyclopedia.com .2017.<http://www.encyclopedia.com/social-sciences/applied-and-social-sciences-magazines/nutrition>.
2. Kuhnlein, H. V, (1989). Culture and ecology in dietetics and nutrition. *J Am Diet*, 89: 1059-1060.
3. WHO, (2004). Global and regional food consumption patterns and trends. Geneva World Health Organization http://www.who.int/nutrition/topics/3_foodconsumption/en/ Accessed on 25/10/2017.
4. World cancer research fund international and the non-communicable diseases (NCDs) alliance, (2014). working together to reduce nutrition related non communicable diseases.

- http://www.wcrf.org/NOURISHING.ncd_alliance.org
5. WHO (2017). Non Communicable Diseases. <http://www.who.int/mediacentre/factsheets/fs355/en/>
 6. Papandreou, D., Rachaminos, M.L., and Al Mussabi, W. (2014). Validation of food frequency questionnaire for vitamin D and calcium in Healthy female college students. *Food and Nutritional Sciences*, 5, 2048-2052.
 7. Hanson, N.I., Neumark-sztainer, D., E., Story, M. and Wall, M. (2005). Association between parental report of the home food environment and adolescent intakes of fruits, vegetable and dairy foods. *Public health Nutrition*. 8, 77-85.
 8. Afolabi, W.A.O., Odebunmi, H. B., Onabanjo, O.O., Sanni, S., A. and Olonisakin, O.O. (2016). Dietary pattern, body composition, obesity and hypertension among a population of market women in Ibadan metropolis, Nigeria. *Nigeria Journal of Nutritional Sciences* 37, 47-56.
 9. WHO/FAO. (2003). Diet, Nutrition and the Prevention of Chronic Diseases, Report of a Joint WHO/FAO Expert Consultation, WHO Technical Report Series – 916, Geneva.
 10. WHO (2002). Reducing risk, promoting healthy life. Geneva, World Health Organization.
 11. Schmidhuber, J. and Shetty, P., (2005). The nutrition transition to 2030 why developing countries are likely to bear the major burden. FAO
 12. Goodman, D. M., Hall, M., Levin, A., Scott Watson, R., Williams, R. G., Shah, S.S., MD, and Slonim, A. D., (2011). Adults with Chronic Health Conditions Originating in Childhood: Inpatient Experience in Children's Hospitals. *Pediatrics* 128(1), 5 Downloaded from <http://pediatrics.aappublications.org/> by guest on October 25, 2017
 13. Hwenda, L. (2013). Addressing diet related risk factors for non-communicable diseases. Global Heal Gov.
 14. Campell, J. (2014). Ten ways the social media has changed the ways we eat. Retrieved from [sw_tch blog html](#)
 15. Vorster, H.H. and Gibney M .J. (2009). Food and nutrition-related diseases: the global challenge. In: Gibney MJ, Lanham SA, Cassidy A, Vorster HH, editors. Introduction to Human Nutrition. 2dth ed. South Africa, Oxford: Blackwell Publishing Ltd.
 16. Norman, R., Bradshaw, D., Schneider, M., Joubert, J., Groenwald, P. and Lewin, S. (2007). A comparative risk assessment for South Africa in 2000: towards promoting health and preventing disease. *S Afr Med J*. 97, 637–641.
 17. Ministry of Health (2014) Non-Communicable Disease risk factor baseline survey. Uganda Report Retrieved from www.Health.Go.Ug
 18. Bloom, D.E., Cafero, E.T., Jané-Llopis, E., Abrahams-Gessel, S., and Bloom, L.R., Fathima, S., (2011). The global economic burden of Non-communicable Diseases. Geneva: World Economic Forum.
 19. Haregu, T.N, Oti, S, Egondi, T. and Kyobutungi, C. (2015) Co-occurrence of behavioral risk factors of common non-communicable diseases among urban slum dwellers in Nairobi, Kenya, *Global Health Action*, 8:1, 28697, DOI:10.3402/gha.v8.28697.