DIABETES AND LIFESTYLE MODIFICATION AWARENESS AMONG NIGERIANS

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Abstract

Health they say is wealth. This statement is responsible for the importance of well-being to the individual in question and the development of a society at large. Therefore, health communication is becoming an area all over the world that cannot be neglected. The numerous problems related to health issues have been fully identified mostly with developing countries ranging from the continent of Asia, and Sub-Sahara Africa. World Bank group affirms that heart disease, cancer, diabetes, chronic respiratory conditions and other noncommunicable diseases increasingly threaten the health and economic security of many low-and middleincome countries. According to Africa Development Bank, this is creating a double disease burden which Africa health systems are ill equipped to handle. In Nigeria, the figure may likely rise by almost 1.0% in the next 10 years considering the nonchalant attitude of Nigerian generally to health (Osain, 2011). The High rate of diabetes that exists in Nigeria will also raise the rate of obesity in those affected. This study examined the awareness trend of diabetes and its associated lifestyle against the backdrop of increase in the rate of the disease. The rate of increase in diabetes in Africa is predicted to witness a rise from 10m to 20m by 2015. Using survey method, 50 respondents were interrogated. The study reveals that media information are not sufficient in few cases and are not available in most cases on diabetes and has no relationship with a healthy lifestyle. Also, respondents believe bad diet lifestyle is not a determinant for diabetes which is hereditary. Aside promoting communication campaign through edutainment programmes on the mass media, this study suggest other ways of communicating with the public to provide the knowledge needed in order to reduce the outbreak of diabetes in Nigeria.

Keywords: Diabetes, lifestyle, Well-being, Health, and Nutrition

1. INTRODUCTION

Good health is an essential aspect of man which is necessary for the wellbeing of man to effectively function and perform daily activities. Therefore WHO (1946, p.1) defines health as the "state of complete physical, mental and social well-being and not merely the absence of disease or infirmity". This basic fact about what health means practically is not far from the truth on human conditions and the search for total wellness of man. This fact about health is also the reason Nordenfelt (2007, p.1) further explains that

"To establish that a person is healthy does not just entail some objective inspection and measurement. It presupposes also an evaluation of the general state of the person. A statement that he or she is healthy does not merely imply certain scientific facts regarding the person's body or mind but implies also a (positive) evaluation of the person's bodily and mental state."

According to Czeresnia (1999 p.703), "health is not an object that can be constrained within the field of objective knowledge." It does not translate into scientific concept." Health may be defined as the "state of optimum capacity of an individual for the effective performance of the roles and tasks for which he has been socialized." (Ashgate, n.d, p.3)

Health is also a significant aspect of any society, because it is one of the determinants in achieving a nation's development. According to United Nations, (2015), the Millennium Development Goal report, one of the focuses of the goals in achieving the fight against poverty. This understanding accounts for the numerous attention NGO and humanitarian organisations pay to countries challenged with health issues. Also, different development aid, Non-governmental organisations and individual producers such as Action group hunger, World Food Programme, United Nations Children Fund etc. are no exception.

Some of these common diseases are eczema, cholera, tuberculosis, malaria, measles, HIV/AIDS, cancer, yellow fever, diabetes, among others. (WHO, 2007). However the nation is usually faced with different diseases that keep emerging worldwide. In all of these health challenges experienced worldwide, African countries and the sub-Saharan countries or nations are said to be affected with lots of health challenges with little or no solution to these health challenges. The National Institute for Diabetes (2014) affirms that proper nutrition and physical activity in reducing rates of disease and death is important.

While most medical practitioners and professional in medical field believe strongly that more need to be done in terms of research to provide medications that will provide lasting solutions to these health problems, Hyman, Ornish, and Roizen (2009 p.12) stress the need for a better culture of human lifestyle because "diabetes could be caused by lifestyle and environmental factors namely our diet, sedentary lifestyle, smoking, chronic stress, and environmental toxins." There has been diverse proof through research that eating healthy is directly related to good health especially by different health organisations such as National Center for Chronic Disease Prevention and Health Promotion, National Institute of diabetes and digestive and kidney disease e.t.c

One of the causal diseases attached to the lifestyle of man is diabetes. Diabetes is a disease that has continued to increase as a result of the high intake of sugar coupled with the lack of daily exercise activities in man. According to National Centre for Chronic Disease Prevention and Health Promotion (2009 p.3) "Tackling chronic disease requires a closer look at the major conditions that affect our nation namely, heart disease and stroke, cancer, diabetes, arthritis, obesity, respiratory diseases, and oral conditions".

This paper while analysing the increasing challenges of diabetes in Nigeria. To examine the availability of sufficient information is provided by the mass media on diabetes and investigates the role of bad diet lifestyle play in the increased rate of diabetes in Nigeria. The study examined the above through survey and interview with medical attendants and medical professionals.

2. HEALTH IN NIGERIA

There are so many diseases that seem to face the nation as a whole. As the search for solutions to these problems continue, other health challenges also continue to arise with regards to health in the world.

With just 13% of the world's population, the sub-Sahara Africa, according to Cook (2009, p.1), is immerse with disease burden and frail health systems which are embedded in a boarder content of poverty, underdevelopment, conflict and weak or ill managed government. In 1999, research shows that there was an increase in the burden of diseases by 15% (World Economic Forum 2013). The problem of health care and the increase in diseases is becoming a thing of concern as medical practitioners, and medical researchers seek out possible solutions to curing present diseases and new diseases.

As observed by Airhihenbuwa (2012, p. 629), "twelve years ago, HIV and AIDS was the major health issue that preoccupied domestic and global policy makers. Today, HIV and AIDS remain a major health concern (Oyero & Salawu, 2014). However, obesity as a new global pandemic has elevated non-communicable He further notes that, "Obesity alone does not explain many cases of diabetes and high blood pressure in Senegal,

Nigeria, and many other countries. In these countries, normal weight individuals have high rates of these lifestyle-related chronic conditions but without evidence of the modifiable risk factor considered to be the key solution in the United States and European countries." (Airhihenbuwa 2012, p.629).

Dupas (2011 p.1) affirms that although diseases such as malaria, dengue fever and schistosomiasis; waterborne diseases, due to unclean drinking water; respiratory diseases, due to indoor air pollution from cooking and heating with solid fuels; and HIV/AIDS, but diabetes and cancer are common to all countries. These two chronic diseases are said to have increase and likely to increase across the world as time goes on. According to the International diabetes foundation, diabetes affects 285 million people worldwide and could increase to 438 million people by 2030.

3. DIABETES

Diabetes is a "chronic, metabolic disease characterized by elevated levels of blood glucose (or blood sugar), which leads over time to serious damage to the heart, blood vessels, eyes, kidneys, and nerves." (WHO, 2015) It is said to occur when a person does not produce enough insulin. These forms of excess sugar is said to cause the disease. Diabetes can also be caused as a result of frequent intake of sugar-sweetened beverages such as sweet tea, energy drinks, fruit bunch, regular soda, sugary drinks etc. These consumables can raise the blood glucose and increase calories in the body which could lead to diabetes. Willett, Koplan, Nugent, Dusenbury, Puska and Gaziano (n.d p.834) stress that

"In recent years, researchers have recognized the insulin resistance syndrome (also known as the metabolic syndrome) as a common contributing factor to the development of diabetes, CAD, and some cancers. The syndrome is characterized by increased waist circumference, low HDL (high-density lipoprotein) cholesterol, high levels of triglycerides, hypertension, and glucose intolerance. The most direct causes are overweight and inactivity, but dietary factors contribute.

A patient in this state therefore is at risk of having high blood pressure which could lead to heart attack. Also this could further lead to high blood glucose damages nerves and blood vessels, leading to complications such as heart disease, stroke, kidney disease, blindness, dental disease, and amputations. Other complications of diabetes may include increased susceptibility to other diseases, loss of mobility with aging, depression, and pregnancy problems. (National Institution of diabetes and digestion and kidney diseases, 2015).

From research, it is known that factors such as environmental factors, hereditary are factors that can facilitate the effect of diabetes. These factors are mostly common with type 1 diabetes. Diabetes consists of three types namely, type 1 diabetes, and type 2 diabetes and gestational diabetes which develops only during pregnancy.

"As new lifestyles, imported dietary practices, and globalization take roots in the developing world, as Africa is, today, diabetes and its complications are considered an epidemic in Africa, compelling African governments to start paying more attention to its impact as thousands of Africans run the risk of dying young." (Mario Azevedo and Sridevi Alla 2008)

Health organisations such as United Nations Children's Fund is a United Nations, WHO and other NGOs, International journal of diabetes in developing countries have continued to seek diverse ways to curb the problem of diabetes increase in Nigeria and other sub-Sahara countries. For the Nigerian government, on the 14th of November, 2015 which is set aside as world diabetes day, this year marks the 2009-2013 campaign on the theme "Diabetes education and prevention" with the campaign slogan: Diabetes: Protect our future. Another initiative was launched titled: "Stop Diabetes Initiative" by the Minister of Health, Professor Onyebuchi Chukwu.

The Initiative aims to "bring different stakeholders together to halt the increasing prevalence of diabetes in Nigeria. The initiative will effectively and efficiently implement activities for the prevention and control of diabetes as stated in the National Policy and Strategic plan of action for the prevention and control of Non-Communicable Diseases (NCDs)." (WHO, 2015)

According to *The Guardian* Newspaper (2011), the minister of health made the commitment to fight against NCDs to "meet the challenge that NCDs pose to our health, our livelihood and our progress, by encouraging industry to add vitamins and micronutrients into foods."

4. THE ROLE OF COMMUNICATION

Communication is always an essential tool in changing people's lifestyle (Oyero, 2007), especially concerning health matters. Bernhardt (2004) this is because communication involves sharing of information. According to Rimal and Lapinski (2009, p.247) "communication can be defined as the symbolic exchange of shared meaning, and all communicative acts have both a transmission and a ritualistic component."

This means that parties involved in the conversation are trying to gain or attain a point of understanding. This understanding can be achieved through the use of communication tools such as the mass media, such as Radio, Television, film, magazines etc. Traditional communication systems such as community meetings, town crier, dance, festivals etc.

Chew, Palmer, Slonska and Subbiah (2002 p.180) suggest that "one major focus should be the use of group's activities is the use of mass media, particularly in the form of a series of short or long television programs intended to inform the public about self-help steps to improve their own health". Also Martin (2015 p.2) believes that "In light of the increasing prevalence of diabetes mellitus (DM) in both developed and developing countries, it is particularly relevant to explore the kinds of communicative challenges that can emerge in culture and language discordant consultations and potentially impact on the management of this chronic illness."

Interview from different health specialist suggest that there is little or no awareness of the presence of diabetes or the danger diabetes pose on its victims. According to these specialists, people generally are not conversant with the fact that lifestyle could also be a contributing factor to the increase in the rate of diabetes in Nigeria. These they say could reduce, to a large extent, exposure to the common diseases. However, it was noted that although there is need for awareness for people to live a healthy lifestyle but the disease, diabetes seem to be increasing at a low rate as compared to other dangerous and more life threatening diseases common to the sub-Sahara regions. However, The World Health Organisation (2009) reports that "there are 1.71 million people living with diabetes in Nigeria and this figure is projected to reach 4.84 million by 2030. Current prevalence rate estimates of diabetes in Nigeria have been tagged at 2.5 percent compared to its 2.2 percent rate in 2003."

Many Nigerian experts believe that this increase is as a result of lack of education on diabetes and the need for diagnosis, myths and misconceptions around diabetes, lack of appropriate medical infrastructure, financial inability to procure the basic diabetic management supplies, ignorance around diabetes management, absence of well-coordinated networks among diabetics in the country and absence of support from government among others.

Furthermore, Agu, Agu, Nnaji, and Ugochukwu, (2014, p.46) says "health education of the public about DM should be improved through the mass media, and should engage the general populace irrespective of their educational background. The need to engage in regular physical exercises, prevent obesity and do blood glucose screening, should be strongly emphasized."

Nyenwe, Odia, Anele, Ihekwaba, Ojule and Babatunde (2003 p.177) also agrees that "screening of subjects at risk and lifestyle modification to reduce the prevalence of type 2 diabetes".

5. METHODOLOGY

To fully understand the situations surrounding the problem of diabetes in Nigeria as it relates to lifestyle and awareness of Nigerian of the disease, survey method is appropriate in carrying out the research. Health specialists and the public were randomly interviewed on the problem of diabetes and their level of awareness of the disease. 3 hospitals were randomly selected in Lagos state and 50 questionnaire was administered to the general public to further check the level of the public's awareness of diabetes in Nigeria.

6. DATA ANALYSIS

Table 1: How often do you get information on diabetes from the media?

DISTRIBUTION	PERCENTAGE%
Always	7
Often	5
Sometimes	10
Seldom	10
Never	68
	100 n =50
	n =50

The table above reveals that the public is generally not well informed about the danger of diabetes and not adequately informed about the possible causes of the disease. Of the total number of respondents 22% get information from different other avenues about the disease while the others seldom or never get information about the disease. The media which has the sole responsibility of educating the public should provide more room for diseases of this great magnitude to be discussed on air to help reduce and resolve the effects of these diseases by educating the people.

Table 2: Do you think diabetes is hereditary?

DISTRIBUTION	PERCENTAGE%
Yes	84
No	12
Not sure	4
	100
	n=50

Majority of the respondents strongly believe that diabetes is transferred through hereditary rather than other factors. A few are not sure of the relationship the disease might have with hereditary.

Table 3: Do you believe that bad diet could cause diabetes?

DISTRIBUTION	PERCENTAGE%
Yes	29
No	59
Not sure	12
	100
	n=50

The table above reveals that a significant number of the respondents believe there is no connection between their diet and lifestyle on their health or risk of having diabetes. Just 29% of the respondents agreed that bad diet could result in the risk of diabetes. This further explains the lack of knowledge the public have concerning diabetes.

7. FINDINGS

The research revealed that the awareness of the danger posed by diabetes is not generally created in the mass media. This is because data reveal that many people are not aware of how diabetes could be prevented. However, it was observed that people are aware of the concept and its meaning but limited in their information of the serious danger posed by the disease.

On the other hand, most respondents think that the issue of diabetes is more hereditary and really has no form of connection with the lifestyle of people. Consequently, it becomes unnecessary for majority of the respondents to believe that unhealthy lifestyle can result in a person being diabetic.

Despite this, respondents stress the need for NGOs, government, medical practitioners and media establishments to create an environment where informative will be provided to create awareness of the danger, and increase of the disease and the need for people to live a healthy lifestyle in order to reduce the risk of diabetes in Nigeria.

8. DISCUSSION

From the interview, it was discovered that the number of people affected by diabetes in Nigeria has increased but not to a very high rate. It was further observed by the health specialists that majority of the patients although have heard about the diseases did not have sufficient and detailed information on the diabetes in Nigeria. According to one of the specialist, "Diabetes is there in the system, but the public, like the ordinary man on the street does not have a deep knowledge of the possible causes and how they can prevent it, or let's say reduce the level of sugar intake". Furthermore, the interview reveals that most Nigerians still have the habit of not checking their health conditions on a regular basis.

"They do not see the need to come frequently to the hospital to check their sugar level, blood pressure and so on. Nigerians need to start getting used to this culture. They only visit the hospital when a problem occurs concerning their health"

From the survey, results revealed that respondents are aware of the existence and presence of diabetes but don't have in-depth knowledge about the disease. The lack of knowledge especially from the survey shows that respondents lack the knowledge of how their lifestyle could put them at risk of having diabetes. Respondents generally are of the opinion that the frequent intake of sugar is the only way diabetes can be caused.

Furthermore, more than half of the respondents did not understand or know the relationship that exists between the lifestyle of man and diabetes. On the other hand, the result reveals that more that 90% of the respondents believed that many Nigerians rarely have a healthy lifestyle except inherited. Although there is no clear evidence that unhealthy lifestyle directly result in the increase in diabetes in Nigeria, however, medical practitioners believed strongly that having a healthy lifestyle could solve most of the health problems easily encountered by man on of which is diabetes.

9. CHALLENGES AND SOLUTIONS

Hawk (2013, p.1) believes that "most of these Non-communicable diseases (NCDs) in which diabetes is one of them are caused as a result of "unhealthy eating patterns have been increasing around the world as patterns of eating have also changed, with an increase in snacking, skipping meals, eating meals out of a family setting, and eating out of the home"

To further verify the claim stated above, research has been carried out by several health organisations especially those concerned with diabetes issues. According to a research carried out by Hu, (2011) with the support of the American Diabetes Association which includes Epidemiologic studies and randomized clinical trials, "type 2 diabetes is largely preventable through diet and lifestyle modifications."

Hu (2011 p.1249) further stresses that "translating these findings into practise requires fundamental changes in public policies, the food and built environments, and health systems." To curb the escalating diabetes epidemic, primary prevention through promotion of a healthy diet and lifestyle should be a global public policy priority." It has been discovered that the quality of fats and carbohydrates play an important role in the development of diabetes, it is therefore necessary for some basic changes in our lifestyle as Nigerians. According to Chew, Palmer, Slonska and Subbiah (2002, p.180)

"Key lifestyle risk factors included a poor diet, alcohol consumption, tobacco use, and lack of physical exercise. Concurrently, these organizations have proposed dietary and other lifestyle medications to the general public, and in some cases to subgroups of the population at high risk, to lower their risk of chronic diseases such as cancer, coronary heart disease (CHD), non-insulin dependent diabetes, hypertension, and obesity, among others."

It is also important to educate the young generation to imbibe the culture of eating healthy especially with the growing culture of modernisation that seem to encourage the habit of consuming drinks and alcohol and also eating out. While noting that "the main risks driving prevalence of diabetes upwards are related to poor diet,

lack of physical activity, and obesity, Halpin, Morales-Suárez-Varela, Martin-Moreno (2010, p.5) believe that "The westernization of lifestyles and increased urbanization originating in industrialized nations has spread" Children should therefore be encouraged by their family to cook meals at home properly. This will go a long way in changing our orientation about food and also educate people on their diets and the importance of eating healthy.

9.1 Lifestyle

Our way of life is almost the major determinant of how we live and organise all that surrounds all activities of life. The World Teachers Press (n.d p.3) explains that a healthy lifestyle is the need to "eat a variety of healthy food most of the time get regular exercise, have time to relax and get adequate sleep to give our bodies time to recover and grow". Willett, Koplan, Nugent, Dusenbury, Puska and Gaziano (n.d) points out that to prevent these chronic disease, there should be specific changes in diet and lifestyle such as avoid tobacco use, maintaining a healthy weight, maintaining daily physical activity and limit Television watching and eat a healthy diet.

Martin (2015 p.5-6) also affirms that "Diabetes is a chronic illness requiring on-going monitoring by providers and patients. Diabetes consultations orient toward achieving patient compliance Lingua Franca Doctor–Patient Consultations 5 with treatment so as to minimize the life-threatening complications of the illness and their agenda is constructed around recurrent themes such as glycemic control, calibration of medication, diet, and exercise.

Hyman, Ornish, and Roizen (2009 p.14) further recommend that "there are no incentives to drive doctors to treat disease with lifestyle medicine. Changes in policy, reimbursement, research, education, and clinical care encouraging doctors to "do" lifestyle medicine must take centre stage in healthcare reform."

9.2 Physical Exercise

National Centre for Chronic Disease Prevention and Health Promotion (2009 p.5) identifies regular physical activities as the most significant way to stay healthy. The organisation stress that "Not only will physical activity increase one's chances of living longer it can also help control weight; reduce risks for cardiovascular disease, type 2 diabetes, metabolic syndrome, and some cancers; strengthen bones and muscles; improve mental health and mood; and improve ability to do daily activities and prevent falls among older adults" (National Centre for Chronic Disease Prevention and Health Promotion 2009 p.5).

9.3 Recommendations and Conclusion

It can be observed from this research that since our lifestyle could be a contributing factor, and then it is essential for proper information with the public to reduce the risk of diabetes in Nigeria. There is therefore need to educate Nigerians through effective communication. These various ways are stated below.

- 1. As already stated by Agu, Agu, Nnaji, and Ugochukwu, (2014) the problem of diabetes is mostly noticeable at old age. This is why it is important for this education to start from the young generation. According to Mesch (n.d) The technological deterministic view presents the internet as an innovative force that has profound influence on children and youth; technology generates new patterns of expression, communication, and motivation" as avid users. They therefore use a lot of gadgets for surfing the internet, accessing social network sites, gaming and the likes. Presently, there are applications that help motivate people to stay healthy. Some of them are fitnet, argus, swortkit, MapMyFitness, etc. These applications can be introduced to these gadgets by the sellers. This will ensure easy access to the public. Once readily installed on the gadgets before distribution to the customers, young people can have access and begin to understand the importance to stay healthy.
- 2. A healthy lifestyle could reduce the risk of diabetes. Medical practitioners can engage in organising seminars and workshops to serve as a platform in education the public about the risk of the disease.
- 3. Edutainment programmes have been a powerful tool that has proven to effect change especially in health issues. Short edutainment programme can be used to educated people about the disease and the need to live a healthy lifestyle to reduce the risk. Visuals are powerful and have been proven to effect change in man.
- 4. Local government and village heads such as chiefs have been known to have great influence on the

people in their community. They can be used as a medium of communication too educate people on diabetes.

5. The mass media has always been an effective too for effecting change. More programmes productions should focus on health issues and ensuring a healthy lifestyle in Nigeria.

Having highlighted all these recommendations, it is necessary to find out factors preventing Nigerians from living a healthy life. In implementing all these recommendations, the factors militating against the need for a healthy life to prevent the risk of diabetes in Nigeria should be addressed in the process of these campaigns through communication. This is to ensure that the campaign becomes effective and feasible in terms of implementation.

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REFERENCE LIST

- Agu, U., Agu, M., Nnaji, G., & Ugochukwu, D. (2014) Socio-demographic determinants of the knowledge of diabetes mellitus in Onitsha-North Local Government Area, Anambra State, Nigeria. *Orient Journal of Medicine*. 26 (1-2)
- Airhihenbuwa, C. (2012). Lessons of Yesterday, Promise of Tomorrow: Framing New Approaches to Health Communications Globally. *Journal of Health Communication*. 17(6), 629-630
- Ashgate, A. (n.d) Introduction to concept of health. Retrieved from <a href="https://www.ashgate.com/pdf/SamplePages/In Defense of an Evolutionary Concept of Health Intropedages/In Defense of Introduction Concept of Health Introduction Concept of Introduction Concept
- Azevedo, M & Alla, S. (2008) Diabetes in Sub-Saharan Africa: Kenya, Mali, Mozambique, Nigeria, South Africa and Zambia. *Int J Diabetes Dev Ctries*. 2008 Oct-Dec; 28(4): 101–108.
- Bernhardt, J. M. (2004) Communication at the Core of Effective Public Health. *Am Journal Public Health*. 94(12), Pp. 2051–2053.
- Bloom, L., Standing, H., Lucas, H., Bhwiyar, A. Oladepo, O. & Peters, D. (2011). Making health markets work better for poor people: the case of informal providers. *Health Policy Plan.* 45-52
- Chew, F. Palmer, S. Slonska, Z, & Subbiah, K. (2002). Enhancing health knowledge, health beliefs, and health behavior in Poland through a health promoting television program series. *Journal of Health Communication*. 7(3), 179-96
- Cook, M. (2009) Education and professional development. Journal of nursing profession. 17(5), 519-522
- Czeresnia, D. (1999) The concept of health and the difference between prevention and promotion. Cad. Saúde Pública, Rio de Janeiro, 15(4), Pp.701-709
- Dupas, P. (2011) Health Behaviour in Developing Countries. Prepared for the Annual Review of Economics.
- Ejike, C. (2013, P141) Cardio-metabolic and prostatic diseases in Nigeria: isn't what's good for the goose good for the gander? Retrieved on 8th June, 2017 from https://tspace.library.utoronto.ca/handle/1807/44822
- Halpin HA, Morales-Suárez-Varela MM, & Martin-Moreno JM. (2010). Chronic disease prevention and the New Public Health. *Public Health Reviews.* (32)120-154.
- Hasstedt, S., Hanis, C. L. Das, S.K., & Elbein, S. C. (2011) Pleiotropy of type 2 diabetes with obesity. *Journal of Human Genetics*. (56),491–495
- Hawk, C. (2013) Promoting health diet through nutrition education and changes in the food environment: an international review of actions and their effectiveness. Rome: Nutrition Education and Consumer

- Awareness Group, Food and Agriculture Organization of the United Nations. Retrieved on 7th June, 2016 from www.fao.org/ag/humannutrition/nutritioneducation/697
- Hyman, M., Ornish, D. & Roizen, M. (2009) lifestyle medicine: treating the causes of disease. *Perspectives on health reforms.* 15(6), 12-14
- Hu, F. (2011) Globalization of Diabetes The role of diet, lifestyle, and genes American Diabetes Association. *Diabetes Care Journal.* 34(6), 1249-1257
- Mesch, G. (n.d) *The Internet and Youth Culture.* Retrieved on 4th, April 2016 from http://iasc-culture.org/THR/archives/YouthCulture/Mesch.pdf
- Nordenfelt, L. (2007) *Understanding the concept of health.* 1-17. Retrieved on 4th, April 2016 from http://www.fil.lu.se/hommageawlodek/site/papper/NordenfeltLennart.pdf
 - NCDA summary of commitment at and post NDC Government Commitments at the Summit:

 Prepared by the International Diabetes Federation. Retrieved on 4th April 2016 from http://ncdalliance.org/ 1-11
- National Institute of Diabetes (2014) Causes of Diabetes. Retrieved on 4th August, 2016 from http://www.niddk.nih.gov/health-information/health-topics/Diabetes/causes-diabetes/Pages/index.aspx
- Nyenwe, E., Odia, S., Ihekwaba, A., Ojule, A. & Babatunde, S. (2003) Type 2 diabetes in adult Nigerians: a study of its prevalence and risk factors in Port Harcourt, Nigeria. Diabetes *Research and Clinical Practice* (62)177-185
- Osain, M. (2011) The Nigerian health care system: Need for integrating adequate medical intelligence and surveillance systems. *Journal of Pharmacy & Bioallied Sciences*. 3(4), 470-478
- Oyero, O. & Salawu A. (2014). Where Lies the Answer? HIV/AIDS Prevention campaign and the Rising Prevalence in South Africa. *Mediterranean Journal of Social Sciences*. Vol 5, No 23, pp. 2026-2034 http://www.mcser.org/journal/index.php/mjss/article/view/4750
- Oyero, O. S. (2007). Communication for development in Africa: Towards a psychomanagement paradigm. Lagos Papers in English Studies. Vol. 2: 228-237.
- Rimal, R. N. & Lapinski, M. (2008) Why health communication is important in public health. Bulletin of the World Health Organization. (87), 247-247
- The world Teachers Press (n.d) What is a healthy lifestyle. Retrieved on 11th January, 2016 from http://www.didax.com/newsletter/pdfs/healthy 2-5255.pdf
- United Nations (2015) Sustainable development goals. Retrieved on May 6, 2016 from http://www.un.org/sustainabledevelopment/action2015/
- WHO, (2015) The Federal Ministry of Health Nigeria in collaboration with WHO launches "Stop Diabetes Initiative" on World Diabetes Day. Retrieved on 22nd November, 2016 from http://www.afro.who.int/
- Willett, W., Koplan, J., Nugent, R. Dusenbury, C., Puska, P.& Gaziano, T. (n.d) *Prevention of Chronic Disease by Means of Diet and Lifestyle Changes.* Retrieved from http://www.dcp-3.org/sites/default/files/dcp2/DCP44.pdf
- World Economic Forum. (2011) The global economic burden of non-communicable diseases. *Harvard school of public health*. Retrieved on May 7, 2016 from www3.weforum.org/.../WEF_Harvard_HE_GlobalEconomicBurdenNonCommunicab
- World Health Organization (2007) Horn of Africa. Communicable Disease Epidemiological Profile. Emergency-affected countries http://www.who.int/diseasecontrol emergencies/toolkits/Hoa2.pdf