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The Effect of Diet and Lifestyle on the Development of Type 2 Diabetes Mellitus in Nigeria

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INTRODUCTION

Diabetes Mellitus [DM] is referred to as one of the most common leading cause of death in the 21st century [1,2]. It was described as a health threatening associated disease all over the globe [3] and a disease of global health concern [4,5] Therefore, this article will present, analyse the cause and effect of diet and lifestyle on the development of Type 2 Diabetes Mellitus [T2DM] in a developing country (Nigeria). It will examine how government policy could be influenced, create awareness and implement adequate treatment plan.

STATISTICS

Over three decades ago, communicable diseases were the most common global health concerns. However, the trends of event have drastically changed. Evidence from world leading organisations support the fact that DM could be seen as a disease that needs urgent attention in the healthcare delivery sector.

In 1995, the WHO discovered that 135 million people have DM and could increase to 299 million people by 2025, while study revealed that in 2000, 150 million people were estimated to have DM and this number was to double by 2025 [6]. Recently, the International Diabetic Federation [IDF] estimated 366 million people worldwide to have DM and that this might likely increase to 552 million by 2030 [1]. Furthermore, the IDF showed that 5.1 million deaths for under 60 years of old were recorded in 2013 due to DM [7]. Additionally, more recent findings claim that 415 million adults have DM, that by 2040 the number would increase to 642 million [8]. In this discovery, 1 out of 11 adults have DM, 1 out of 7 births are affected by gestational diabetes, while someone dies from DM every 6 seconds [8]. Therefore, they concluded that in 2040, 1 in 10 adults will have DM; of these, T2DM make up 91% of those with DM globally [8].

Moreover, in the most recent update, IDF revealed that 79% of 425 million people worldwide live in low and middle income countries[9] They suggested that if this trend continues by 2045, about 629 million of people with age range of 20-79 years will have DM, that the largest increases will occur in low and middle income regions. DM has become a global issue; different regions of the world affected. IDF reported that China and India have the highest incidence rate globally while Africa is considered to have the lowest rate [7], although the current value has been predicted to double by 2035 [8]. In Africa, 19.8 million people have DM, of which 3.9 million have DM in Nigeria [7]. The main cause have been attributed to diet and lifestyle changes. Hence, there is need for creative awareness.

CAUSES

The main causes of DM have been related to genetics or diet and lifestyle for Type 1 and Type 2 respectively. Findings claim that the main risk factor is lifestyle decisions [10]. However, literature has proven that ethnicity and location could play a role in the development of DM [11]. Having reviewed the literature, it was discovered that DM is now common among children and young adults [12], making it no longer an elderly people's disease as it used to be referred to [13]. This could be accredited to the rapid increase in the number of overweight and obese children and youth resulting from poor diet [14] and increased physical inactivity [15]. This would consequently lead to an early onset of DM characterised with high risk of morbidity and mortality [16]. Could industrialisation, which is a fallout of urbanisation and globalisation of westernised lifestyle be related to the rapid increase of DM?

Diabetes Mellitus, especially T2DM, used to be known as disease of the developed countries, but now, low and middle income countries have currently been seen not to escape from it [11]. Since the onset of urbanisation, creation of free market and capitalism, there have been marked increase of DM [17]. Many government for the sake of new market growth have welcomed transnational food companies; with their poor quality and high in saturated fats and refined sugar, replacing the distribution of traditional healthy food [13,18.19]. However, evidence prove that adoption of urban characteristics; through technological improvement in transportation and telecommunication have improved comfort and mobility. Notwithstanding, it has also impacted on the development of DM in developing countries [20].

IMPACT

In Nigeria, though majority of the indigenous diet are high in calorie and saturated fat, this was easily used up

as energy from high physical activities. But recently, through the increasing importation of technological devices, most of these activities have been replaced mechanically [21]. In urban areas, creation of new office jobs, long hours of working and sedentary lifestyles are on the rise [22]. Hence, there are evidence of reduced physical activities both in urban and rural areas in Nigeria [23], thereby increasing the rate of obesity.

Furthermore, it would be interesting to note that due to the effect of capitalism [24], healthy diet are less accessible and expensive compared to unhealthy food which are easily accessible, less expensive and more convenient. people in poor societies are more likely to be malnourished, and have higher mortality and morbidity rate. This could be evident by the current economic growth, where there is significant increase in price of food items [25].

Moreover, In Nigeria, health care delivery is out-of pocket system. It has been argued that the higher prevalence of DM among the low socioeconomic group is linked to deprivation due to barrier to health service; and have diabetes complications twice higher than those in the privileged group [26,27]. According to Arowolo, the effect of DM is huge in Nigeria [28]. DM patients are faced with great health inequalities, though claim has it that health is everybody's right [29]. Many developing countries, Nigeria included now report the onset of type 2 diabetes at an increasingly young age. This trend towards younger age of onset implies a huge additional burden to the individuals and society and necessitates a lifetime approach to prevention. Legislative action will be necessary to promote a healthier lifestyle for all populations.

POLICY AND HEALTH SYSTEM

In order to achieve maximum benefit from lifestyle interventions changes in government policies and legislation will be needed in addition to individual and community-based programmes. According to the World Health Organization [WHO], everyone has the right to access timely, acceptable and affordable healthcare of appropriate quality. In contrast, millions of people still have difficulty accessing good healthcare [29]. Although critics of the Universal Human Health Right argued that ".....the right to health is impossible to achieve because it either implies that there is such a thing as perfect health" pp. 64 [30]. However, Kumar et al. suggested that the operating health system could promote factors that facilitate health inequality, inadequate availability of health services, unequal access and costly health services [31].

In Nigeria, there are government owned hospitals. These are in deplorable state. Better healthcare delivery is mostly obtainable in private setting. This has made accessibility of care extremely impossible for low income people, who cannot afford the private care [32,33]. Inadequate access to healthcare could result to morbidity and mortality. Therefore, there is need to go beyond the traditional approach to caring for DM to help make a difference for the disadvantaged individuals [34].

IMPLICATION FOR HEALTHCARE PRACTITIONERS

As healthcare practitioners, influencing policies to improve accessibility, availability, quality and universality; so as to reduce the global burden of diabetic care is essential [29]. Moreover, Benjamin and Ubel claim that most people who are obese do not have a choice but to make their consumption from the available unhealthy food that have replaced normal healthy diet [35]. Consequently, influencing government to initiate policies that would allow the removal of excess sugar from food or labelling food for fat and calorie content would help [36].

Additionally, the WHO suggested that early diagnosis can be made through an inexpensive testing of urine for blood sugar [37]. Also, the IDF revealed that more than two-third of diabetes in Africa are undiagnosed [8]. Thus, regular check of urine (for presence of glucose) and blood (for level of glucose) irrespective of the cause of admission; on outpatient and emergency basis, could be advocated. Since healthcare delivery is out-of pocket system in Nigeria, influencing policy on strategies aimed at early diagnosis and treatment at highly subsidised rates would make a difference. This would provide opportunity for early detection, treatment plan, thereby reducing the burden of serious complications.

Lastly, healthcare practitioners could be more active in health promotions. There should be willingness "....to challenge conventional roles, values and boundaries" pp. 10 [38]. Hence, health education on the component of healthy diet, the effect of unhealthy lifestyle and importance of increased physical activities should be enhanced. This would also include influencing and encouraging the government with all that is necessary in mandating more nutrition education in schools, banning advertising of unhealthy products and subsidising healthy foods at the expense of less appropriate foods. In addition, priorities on how T2DM could be prevented should be advocated. Other recommendations such as: active lifestyle, which include regular physical activity of at least 1 hour per day and vigorous activity, which is required to reduce the risk of developing T2DM; and moderate alcohol intake and cessation of cigarette smoking, should be encouraged.

In conclusion, it could be postulated that DM is a global health threatening disease and one of the leading cause of death in the 21st century. T2DM makes up 91% of the incidence of DM worldwide. Studies have related the main causes to changes in diet and lifestyle decisions. These are revealed to have massive impact on diabetic burden, especially the low socioeconomic

group; who cannot afford healthy diet and good medical care. As a result, in developing countries (Nigeria) where healthcare is directly paid for by patients, policies that would favour accessibility, availability and quality of care could be influenced by health practitioners and the government. Also, increased health education on preventive measures, that is, consumption of healthy diet and exercise should be promoted.

REFERENCES

[1] International Diabetes Federation, *IDF Diabetes Atlas*. 8th Ed, International Diabetes Federation, 2011.

[2] National Institute for clinical Excellence, *Type 2 Diabetes in Adults: Management*. National Institute for Clinical Excellence, 2015.

[3] E. Agardth, P. Allebeck, J. Hallqvist, T. Moradi, and A. Sidorchuk, "Type 2 Diabetes Incidence and Socio-Economic Position: A Systematic Review and Meta- Analysis". *International Journal of epidemiology*, 2011.

[4] K. McCracken, and D.R. Philips, *Global Health: An Introduction to Current and Future Trends.* London: Routledge, 2012.

[5] World Health Organisation, *Global Status Report on Non-Communicable Diseases 2014*. World Health Organisation, 2014.

[6] N.P. Steyn, J. Mann, P.H. Bennett, N. Temple, P. Zimmet, J. Tuomilehto, J. Lindstrom, and A. Louheranta, "Diet, Nutrition and the Prevention of Type 2 Diabetes". *Public Health Nutrition*, vol 7(1), pp. 147-165, 2004.

[7] International Diabetes Federation, *IDF Diabetes Atlas*. 6th Ed, International Diabetes Federation, 2013.

[8] International Diabetes Federation, *IDF Diabetes Atlas.* 7th Ed, International Diabetes Federation, 2015.

[9] International Diabetes Federation, *IDF Diabetes Atlas.* 8th Ed, International Diabetes Federation, 2017.

[10] I, Milijkovic-Gacic, X. wang, C.M. Kammerer, C.H. Bunker, L.A. Patrick, V.W. Wheeler, L.H. Kuller, R.W. Evans, and M.J. Zmuda, "Sex and Genetic Effects on Upper and Lower Body Fat and Associations with Diabetes in Multigenerational Families of African Heritage". *Metabolism*, vol 57(6), pp. 819-823, 2008.

[11] S.F. Farsani, M.P. Van Der Aa, M.M.J. Van Der Vorst, C.A.J. Knibbe and A. De Boer. "Global Trends in the Incidence and Prevalence of Type 2 Diabetes in Children and Adolescents: A Systematic Review and Evaluation of Methodological Approaches". *Diabetologia*, vol 56(7), pp. 1471-1488, 2013.

[12] L. Chen, D.J. Magliano and P. Z. Zimmet. "The Worldwide Epidemiology of Type 2 Diabetes Mellitus- Present and Future Perspective". *Nature Reviews Endocrinology*, vol 8(4), pp. 228-236, 2012.

[13] World Health Organisation. Fact sheet 311: Obesity and Overweight. *Technical Report*. 2015a. Available at http://www.who.int/mediacentre/factsheets/fs311/enlast

[14] United Nations. Report of the Special Rapporteur on the Right to Food. *Oliver De Schutter*. 2012. Available at http;//www2.ohchr.org/English/bodies/hrcouncil/docs/19session/a-hrc-19-59-add2_en.pdf

[15] F.B. Hu, M.J. Stampfer, C. Solomon, S. Liu, G.A. Colditz, W.C. Willett, and E.B. Rimm. "Physical Activity and Television Watching in Relation to Risk for Type 2 Diabetes Mellitus in Men". *Archives of Internal Medicine*, vol 161 (12), pp. 96-105, 2001.

[16] E. D'Adamo and S. Caprio. "Type 2 Diabetes in Youth: Epidemiology and Pathophysiology". *Diabetes Care*, vol 34(2), pp. 161-165, 2011.

[17] C. Hawkes. "Uneven Dietary Development: Linking the Policies and Processes of Globalisation with the Nutrition Transition, Obesity and Diet-related Chronic Diseases". *Globalisation and Health*, vol 2(4), 2006. DOI:10.1186/1744-8603-2-4

[18] S.E. Clark and C. Hawkes. Exporting Obesity. Institute for Agriculture and Trade Policy. 2012. Available at htt://www.iatp.org/files/2012_04_04_exportingobesity_KHK_SM_DW.pdf

[19] C. Cardenas and J.G.V. Hernandez. "Strategic Spatial Analysis of the implementation of Business opening Politics of Mexico" FAEDPYME International Review-FIR, vol 4(7), pp. 8-25, 2015.

[20] World Health Organisation. Preventing Chronic Disease: A vital Investment. *World Health Organisation Global Report*. 2005.

[21] R. Sodjinou, V. Agueh, B. Fayomi and H. Delisle. "Obesity and Cardio-Metabolic Risk Factors in Urban Adults of Benin: Relationship with Socioeconomic Status, Urbanisation and Lifestyle Patterns". *BMC Public Health*, vol 8(84). 2008. DOI: 10.1186/1471-2458-8-84.

[22] C.E. Ekpenyong and E.E. Akpan. " Urbanisation Drift and Obesity Epidemic in Sub-Saharan Africa: A Review of the Situation in Nigeria". *European Journal of Sustainable Development*, vol 2(2), pp. 141-163, 2013.

[23] J.F. Sallis and K. Glanz. "Physical Activity and Food Environments: Solutions to the obesity Epidemic". *Milbank Quarterly*, vol 87(1), pp. 123-154, 2009.

[24] C.J. Wells. "Obesity as Malnutrition: The Role of Capitalism in the Obesity Global Epidemic".

American Journal of Human Biology, vol 24(3), pp. 261-276, 2012.

[25] R. Wilkinson and K. Pickett. *The Spirit Level: Why Equality is Better for Everyone*. London: Penguin, 2012.

[26] J.A. Dalstra, A.E. Kunst, C. Borrell, E. Breeze, E. Cambois, G. Costa, J.J. Geurts, E. Lahelma, H. Van Oyen, K.N. Rasmussen and E. Regidor. "Socioeconomic Differences in the Prevalence of Common Chronic Diseases: An Overview of Eight European countries". *International Journal of Epidemiology*, vol 34(2), pp. 316-326.

[27] A. Espelt, C. Borrell, A.J. Roskam, M. RodriguezSanz, I. Stirbu, A. Dalmau-Bueno, E. Regidor, M. Bopp, P. Martikainen, M. Leinsalu and B. Artnik. "Socio-Economic Inequality in Diabetes Mellitus Across Europe at the Beginning of the 21st Century". *Diabetologia,* vol 51(11), pp. 1971-1979, 2008.

[28] D. Arowolo. "The Effects of Western Civilisation and Culture on Africa". *Afro Asian Journal of Social Sciences*, vol 1(1), pp. 1-13, 2010.

[29] World Health Organisation. *Health and Human Rights*. Fact Sheet N323, 2015b

[30] S.A. Davies. *Global Politics of Health*. Cambridge: Polity Press. 2010.

[31] A.S. Kumar, L.C. Chen, M. Choudhury, S. Ganju, V. Mahajan, A. Sinha and A. Sen. "Financing Health Care for All: Challenges and Opportunities". *The Lancet,* vol 377(9766), pp. 668-679, 2011.

[32] S. Abimbola. "Transition Cost of Access to Health Care: Implications of the Care-Seeking Pathways of Tuberculosis Patients for Health System Governance in Nigeria". *Global Public Health*, vol 10(9), pp. 1060- 1077, 2015.

[33] A.M. Omer. "The Role of Regulatory Impact Assessment: Privatisation, Social Welfare Services and its Alternatives of Sudan". *Pharmaceutical and Biological Evaluations*, vol 2(5), pp. 160-178, 2015.

[34] World Bank Group. *Millennium Development Goals.* 2004.

[35] D.J. Benjamin and A.P. Ubel. "Free Market Madness: Why Human Nature is at Odds with Economic and why it Matters". *Journal of Economic Literature,* vol 47(4), pp. 1154-1156, 2009.

[36] Department of Health. *The Responsibility Deal*. London: Department of Health, 2011.

[37] World Health Organisation. *Diabetes*. World Health Organisation, 2016.

[38] D.K.H. Messias. "Globalisation, Nursing and Health for All". *Journal of Nursing Scholarship*, vol 33(1), pp. 9-11, 2001.