

Review Article

Obesity and Chronic Disease a Fast Emerging Epidemic in Developing Countries and the Pessimistic Attitude of Health Care Professional that need Urgent Intervention

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Abstract

Introduction: Obesity is a global public health problem, a common health disorders in industrialized countries but now becoming increasingly prevalent in developing world.

This disease has long been topic of preconceived notion and dishonour in the society but currently the public perception is slowly shifting; unfortunately many people half of which are healthcare professionals still assume that obesity is the individual's fault solely resulting from eating too much with little activities. It is well documented that a person is no more at fault for developing obesity than they are at fault for developing other clinical disorder such as high blood pressure; an obese individual therefore deserves the same respect and compassion among healthcare and the society as whole like other patient at our various healthcare institution.

The America Medical Association and the other healthcare experts acknowledge that obesity is far more complex than what it was previously assumed to be, and that it was no longer a personal option but a disease caused by complex interplay by the individual genetic, environment and many other related factors. Despite progress made in the management of obesity, its prevalence continues to increase sharply making it a public health pandemic that need urgent intervention. Several chronic disorder have been shown to have strong association with obesity, in order word the risk of developing this co-morbidities rises exponentially with increasing levels of obesity over 30 kg/m² basal metabolic index.

In summary therefore, global awareness about obesity like those of Covid-19 Pandemic is a must in our society and communities in order to provide the essential and early interventions required.

INTRODUCTION

Obesity was first recognized as a disease in 1948 by World Health Organization (WHO), and the American Medical Association (AMA) became aware of this disease in 2013. This disorder has reached an epidemic proportions globally a disease once associated with high-income countries, now prevalent in most developing countries like Lesotho. Obesity is made up of complex, multifactorial disease associated with a wide spectrum of comorbidities due to the cumulative harmful effect on both the endocrine and metabolic profile of the individual, leading to an increased in physical burden imposed by this accumulated fat on the surrounding body organs and tissues [1].

It is well documented that a person is no more at fault for developing obesity than they are at fault for developing other clinical disorder such as high blood pressure. That is to say a person with obesity deserves the same respect and compassionate

among healthcare professional like other patient at our various health facilities [2]. Despite progress made in the management of obesity, its prevalence continues to increase sharply making it a public health pandemic, that need urgent intervention.

This recognition by the AMA and the other healthcare professional, concluded that obesity is far more complex than what it was previously assumed to be, and that it was no longer a personal choice but a disease caused by complex inter play by the individual genetic, environment and many other associated factors [3].

Obesity has long been topic of Bias and Stigma in the society but at the present public perception is slowly shifting, unfortunately many people (half of healthcare professionals (WHO)) still assume that obesity is the individual's fault solely resulting from eating too much with little moment. it is of most important that the global population should realized that obesity

and overweight are public health problems that are raising concern worldwide and almost all countries are facing these problems [3].

A prevalence study of nurses in Scotland established that 69% were overweight or obese, and obesity was significantly higher among nurses than other healthcare professionals and those working in non-health-related occupations [4].

The Department of Health in England has estimated that over 300 000 healthcare professionals in the country can be classified as obese (21%) [5], and about 5000 nurses and midwives registered in Australia, New Zealand or the UK were found to have a higher prevalence of obesity and overweight when compare to the general population [5].

It is unfortunate those health care professionals who are belief to be better informed are also victim of their ignorance.

World Health Organization, defined obesity as an abnormal or excessive fat accumulation that presents a risk to health, another definition by the Obesity Medicine Association (OMA) is that obesity is as a chronic, relapsing, multi-factorial, neurobehavioral disease, wherein an increase in body fat promotes adipose tissue dysfunction and abnormal fat mass physical forces, resulting in adverse metabolic, biomechanical, and psychosocial health consequences [6].

WHO, in 2014 states that more than 1.9 billion adults aged 18 years and older were overweight over 600 million adults were obese and this burden is projected to increase to one billion obese globally by 2030 [6]. While in 2016 it was documented that grated than 1.9 billion adults were found to be overweight, out of which 650 million of this number were found to be obese.

Obesity by itself is estimated to cause about 3.4 million deaths globally with 3.9% of years of life lost and 3.8% of Disability Adjusted Life Year (DALYs) globally in the year 2010 [4], an approximately, 2.8 million adults die each year as a result of being overweight or obesity.

In the Recent global figures from the World Health Organization (WHO) indicate that, the prevalence of obesity and overweight is fast becoming a liability in the developing world [7], with about 422 million adults aged over 18 years were living with diabetes and mostly obese in 2014 [8]. Among men in America more than 6 out of 10 are overweight or obese while estimated 5 Out of 10 women are obese or overweight [7].

It is imperative therefore to classify obesity as a chronic or non-communicable disease and its aetiology is far more complex than simply imbalance between energy intake and energy output or eating too much and exercising too little in order word there are various mechanisms involved in the development of obesity.

Looking at the energy balance (Energy in and Energy out) this is the relationship between energy in (food calories taken into the body through food and drink) and the energy out (calories being used in the body for our daily energy requirements).

Energy stored within our food thermodynamically (in Calories or kcals) is converted into energy for work, heat or for

storage purpose. When it comes to energy output the body's energy needs: is the amount of energy required for maintenance at rest, physical activity and movement, and for food digestion, absorption, and transport. Estimated amount of energy needed is approximate to the amount of oxygen consumed.

In developing world especially in Sub Saharan Africa (Lesotho) this region where not know to have disease like overweight except due to under-nutrition and a major burden of HIV, tuberculosis, malaria and other infectious diseases. However, in recent years, this continent has seen a rapid rise in overweight and obesity [8].

Lesotho, a country which was largely burdened by food insecurity, underweight and non- Communicable Disease (NCD) such as, cardiovascular diseases and diabetes are now becoming overwhelmed by obesity [9].

It was well known in the past that chronic disease exists primarily in rich countries due to the abundant food and that communicable diseases are more prominent in poor countries. This simple division is no longer true taken for example Finland; Taiwan and South Korea countries are examples of relatively rich countries with low prevalence of the major chronic diseases. Canada and the United Kingdom have higher death rates from chronic diseases than from communicable diseases; however, the chronic disease toll in those countries is still much lower than those prevailing in many poor countries. Conversely, even very poor countries, such as India and Pakistan, and moderately poor countries, such as Russia and China, show higher death rates from chronic disease than communicable disease [3]

The three main well study risk factors attributed for chronic diseases is over nutrition, lack of physical activity, and tobacco and alcohol use are generally increasing in developing countries, just as the case in developed countries. The alarming aspect of this situation on the public health and the economic impact is becoming more with little indication of its slowing down [3].

The dramatic changes occurring in people's diets around the world have been referred to as the nutrition transition, where parent feeds the young one with junk procure from fast food restaurants like KFC, Debonair PIZZA, steak from STEER to mention a few.

Poor health nutrition is an important risk factor for developing of obesity complicated by chronic diseases. In developing countries, lack of access and affordability of preventive care measure is the factor facing the population one can imaging in circumstance where president of this developing countries travel to developed countries one can then imaging the fate of the common people in the countries .

A classic example is Lesotho, the population of Male obesity in Lesotho has grew substantially from 1.5 (1997) to 4.6 % (2016) with the annual rising rate that reached a maximum of 9.52 % in 2004 and then decreased to 4.55 % in 2016. In 2016, male obesity prevalence in the country rose to 4.6 %. While the female counterpart Female obesity increased from 14.6 % in 1997 to 26.7 % in 2016 The Average annual growing rate is 3.23

%, with a prevalence of 26.7%. It is a population of about 2 million and nominal per capital gross domestic product of \$1,299 and classified as a lower middle income country.

The primary health care systems in most of these countries are weak with lack of adequate infrastructure and support services leading to ill-equipped health system to respond to emerging disease. Treatments that are extremely cost-effective in developed countries, such as latest drugs for antihypertensive and cholesterol-lowering drugs, are unaffordable / available to most affected people in developing countries.

The serious effect of chronic disease globally with is not well acknowledge among health care practitioner because these diseases are often less visible than the fast and serious communicable diseases such as, Ebola or the novel corona virus disease (COVID-19) caused by Severe Acute Respiratory Coronavirus 2 (SARS-CoV-2).

Chronic disease is slowly progressing in nature, and most often remain under diagnosed and fast becoming a serious threat to health of people in developing countries like Lesotho.

These chronic diseases have been shown to have strong correlations with the degree of obesity. That is the risk of developing a number of obesity-related co-morbidities rises exponentially with the severity of the obesity for example over 30 kg/m² (BMI), which is further associated with a graded increase in the relative risk of premature death, primarily from CVD [10]. At present of the recurrent infectious communicable diseases has suppressed the incidence chronic disease burden in the society, unfortunately because of the poor Healthcare infrastructures and the increasing adopting of the unhealthy lifestyles. Such as the fast growing takeaway food stand KFC, Macdonald to mention a few. As documented by the WHO the increasing prevalence of chronic disease in developing countries can be divided into two main trends and that is the rising average age of the population and changing epidemiologic profile of the population [11].

Some few of the well-known chronic disease are the Hypertension, Diabetes, Arthritis, Epilepsy and Asthma.

HYPERTENSION

Hypertension commonly referred to a high blood is a form of cardiovascular disorder that results from a wide range of interconnected aetiologies and defined as abnormally elevated arterial blood pressure [9]. According to the Joint National Committee 7 (JNC7), normal blood pressure is a systolic BP < 120 mmHg and diastolic BP < 80 mmHg. It is also defined as systolic BP level of ≥ 140 mmHg and/or diastolic BP level ≥ 90 mmHg. The grey area falling between 120–139 mmHg systolic BP and 80–89 mmHg diastolic BP is defined as “pre hypertension” [10].

It is usually referred to as a silent killer, as very rarely any symptom can be seen in its early stages until a severe medical crisis takes place like heart attack, stroke, or chronic kidney disease [11]. Since people are unaware of excessive blood pressure, it is only through measurements that detection can be done. Although majority of patients with hypertension remain

asymptomatic, some people with HTN report headaches, light headedness, vertigo, altered vision, or fainting episode [12].

DIABETES

Diabetes is said to consist of a group of metabolic diseases characterized by hyperglycaemia (elevated blood sugar) resulting from defects in insulin secretion, insulin action, or both. The chronic hyperglycaemia of diabetes is associated with long-term damage, dysfunction, and failure of different organs, especially the eyes, kidneys, nerves, heart, and blood vessels. Is divided into two type that is type I and type II

Type 1 diabetes due to the destruction of β -cell leading to absolute deficiency of insulin also referred to as Immune-mediated type of diabetes disease.

This form of diabetes, accounts for only 5–10% of those with diabetes globally, previously encompassed by the terms insulin-dependent diabetes or juvenile-onset diabetes, results from a cellular-mediated autoimmune destruction of the β -cells of the pancreas that function in the secretion of insulin.

Type 2 diabetics is due to insulin a relative or absolute deficiency of insulin, this form of diabetes, accounts for about 90–95% of those with diabetes, previously referred to as non-insulin-dependent diabetes [13].

ARTHRITIS

Arthritis means the inflammation of the joints, this inflammation may be a sign rather a sign rather than a specific diagnosis but most of the time used to refer to any disorder that affects the joints and the surrounding tissues. Joints are places in the body where two or more bones come together, such as the knees, wrists, fingers, toes, and hips. These disorders fall within the broad category of rheumatic diseases. These are diseases characterized by inflammation (signs include redness or heat, swelling, and symptoms such as pain) and loss of function of one or more connecting or supporting structures of the body. They especially affect joints, tendons, ligaments, bones, and muscles. Common signs and symptoms are pain, swelling, and stiffness [14]. In the case of osteoarthritis, there is damage to the cartilage, which begins to wear and aggravated with obesity leading to stiffness and may become very severe when the disease affects the spine and the weight bearing part of the joints (the knee and hips) [15]. Rheumatic Arthritis is the other hand is the inflammatory disease of the immune system and it targets first the synovial or lining of the joint, resulting in pain, stiffness, swelling, joint damage, and loss of function of the joints [16].

ASTHMA

In the cases of asthma, asthma is an inflammatory disorder of the respiratory system, particularly of the bronchioles in the lung, (the major passages for air into the lungs). During an attack, the bronchioles become constricted and the volume of oxygen reaching the alveoli is greatly reduced and the patient struggle to breath and anxious. Asthma can be defined as a chronic inflammatory disease of the airways. It can also be said to be a chronic inflammation associated with airway hyper

responsiveness (an exaggerated airway-narrowing response to triggers, such as allergens or exercise), that leads to recurrent symptoms such as wheezing, dyspnoea (shortness of breath), chest tightness and coughing [17]. In reality Overweight and obesity is fast becoming a common precursors caused by the underlying risk factors [18].

STATEMENTS OF THE PROBLEM

Obesity is fast becoming a global epidemic affecting everybody, worsen by our 21th century eating habits, and inactivity among are youth playing video game all days are believe to be the leading courses of obesity in our society globally.

Obesity is a well-known risk factor for most chronic diseases; it's places patients in an additional cardiovascular risk with a reduced life expectancy.

The prevalence of chronic diseases complicated by obesity and overweight in developing countries are slowly threatening these countries ability to improve the health of it's populations and speedily becoming a double burden particularly on its complication and severe health consequences of this disease. It unfortunate that obesity has a common occurrence with it associated complication among people of all income levels.

Looking back from 1975 till date, the case of obesity has nearly tripled, from the reliable data presented in 2016, more than 1.9 billion adults above the age 18 years and older, were overweight. It is unfortunate that most of the world's population lives in developing countries where overweight and obesity kills more people than underweight [19].

Recent studies reveal that there are 236 other diseases impacted by obesity of which 13 of which are cancers related. Another study reveals that majority of obesity resides in a few countries such as outline below are the top 10 countries that contribute half to the entire world's obesity.

The Least Obese African Countries in Africa include the following Central Africa Republic 5.10%, Uganda 4.90%. Somalia 4.60%, Democratic Republic of Congo 4.40%, Niger .30%, Ethiopia 4.00%, Rwanda 4.00% and Burundi 2.60%. [1].

Classification /and type of obesity

This can be done by measuring the weight, fat distribution in the body and the other:

Weight uses the BMI which is Body mass index (BMI) – the weight in kilograms divided by the square of the height in meters (kg/m²) – is a commonly used index to classify d obesity in adults. But the WHO described it as follow: below 18.5kg = underweight 18.5 to 24.9 = Health weight, 25.0 to 29.9 = over weight while obesity is a BMI equal to or more than 30[1]

Distribution of body fat:

- Upper body (abdomen and flanks, android obesity, "apples")
- Lower body obesity (legs and buttocks, gynoid obesity, "pears").
- Visceral adiposity

Other technic of classifying obesity include Skin fold thickness, Waist: hip ratio, Waist circumference and the Bio-electric impedance, Dual-Energy X-ray Absorptiometry, Computer Topography Magnetic Resonance Imaging to mention a few.

It is very impractical to use some method like the DEXA, CT and MRI because of it cost in our everyday clinical encounters. The estimates of body fat using the BMI, calculated by dividing the (body weight in kilograms by height in meters squared, or kg/m²) and waist circumference do have their own limitations compared to the imaging methods outline above, but they still provide the necessary information and are easily implemented in a variety of practice settings [1].

Obesity disease affects all races with some certain ethnic and racial groups appear to be particularly predisposed and the emigration of population to the affluent countries of has led to increase incidence of developing obesity due to the alteration in the dietary habits and activities [20]. There is a substantial risk that the overall performance of the global population health of will be affected or compromised if something is not done urgently. This is because currently the resources available to healthcare as exemplified by the Coid-19 pandemic are insufficient to cope with both the volume of patients and the comprehensive basket of services and program in our health care institution.

REFERENCES

1. WPT James. WHO recognition of the global obesity epidemic. *Int J Obes (Lond)*. 2008; 32: S120-6.
2. IngeKersbergen. National Centre for Weight and Wellness, Washington, D.C. Obesity and dehumanization. 2019.
3. AMA Policy H440.842, 2013 Annual Meeting of the HOD. 2021.
4. Kyle RG, Neall RA, Atherton IM. Prevalence of overweight and obesity among nurses in Scotland: a cross-sectional study using the Scottish Health Survey. *Int J Nurs Stud*. 2016; 53: 126-133.
5. Department of Health. Healthy weight, healthy lives: one year on. London, 2009.
6. Bays HE, Seger JC, Primack C, McCarthy W, Long J, et al: Obesity Algorithm, presented by the Obesity Medicine Association. 2020..
7. LOPEZ AD, CD MATHERS, M EZZATI, et al. Global Burden of Disease and Risk Factors. World Bank. Washington, DC. 2006.
8. Aram V Chobanian, George L Bakris, Henry R Black, William C Cushman, Lee A Green, Joseph L Izzo Jr, et al. Seventh report of the Joint National Committee on prevention, detection, evaluation, and treatment of high blood pressure. *Hypertension*. 2003; 42: 1206-1252.
9. Fisher ND, Williams GH. Hypertensive vascular disease. In: Kasper DL, Braunwald E, Fauci AS. editors. *Harrison's Principles of Internal Medicine*. 16th New York, NY, USA: McGraw-Hill; 2005; 1463-1481.
10. POPKIN BM. Nutritional patterns and transitions. *Popul Dev Rev*. 1993; 19: 138-57.
11. World Health Organization G. Obesity: preventing and managing the global epidemic: Report of a WHO Consultation. 2004.
12. Kumar MR, Shankar R, Singh S. Hypertension among the adults in rural Varanasi: a cross-sectional study on prevalence and health seeking behavior. *IJPSM*. 2016; 47: 78-83.
13. Report of the Expert Committee on the Diagnosis and Classification of Diabetes Mellitus. *Diabetes Care*. 1997; 20: 1183-1197.

14. WebMD. The Basics of Arthritis, 2015-2017.
15. Arthritis. 2017.
16. Rheumatology Associates in Grapevine what are some examples of rheumatic diseases?. 2017.
17. Global Initiative for Asthma (GINA): Global strategy for asthma management and prevention. 2021.
18. Bays HE, Seger JC, Primack C, McCarthy W, Long J, et al. Obesity Algorithm, presented by the Obesity Medicine Association. 2021.
19. WHO Obesity and overweight. April 18, 2021.
20. Angel S Byrd, Alexander T Toth, Fatima Cody Stanford. Racial Disparities in Obesity Treatment. *Curr Obes Rep.* 2018; 7: 130-138.

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