

LIFESTYLE DISEASES: A REVIEW

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ABSTRACT

As the developed world contends with high burden of non-communicable diseases (NCDs), developing countries and countries undergoing socioeconomic transition are experiencing a constellation of both communicable and non-communicable diseases.

'Lifestyle diseases' or 'diseases of civilization' arising from decline in exercise and activity of daily living caused by availability of technology, safety fears and changes to our living environment and preference for westernized foods are a major contributor to the global upsurge in non-communicable diseases.

It is estimated that of the projected 64 million deaths worldwide in 2015, 41 million (64%) will result from chronic or non-communicable diseases.

While the world must continue to fight infectious or communicable diseases, it will be disastrous to ignore the NCDs. The reason is that NCDs are implicated in the aetiology of cardiovascular diseases, hypertension, stroke, type-2 diabetes mellitus, osteoarthritis and certain neoplasms. These conditions not only lead to reduced quality of life given their protracted nature but also to premature death. In view of the above attention to lifestyle choices is imperative.

Keywords: *lifestyle, non-communicable diseases, neoplasms.*

INTRODUCTION

Lifestyle is often defined as a constellation of habitual activities unique to a person which lend consistency to activities, manners, behaviours, manners of coping, motivation and thought processes, and define the way in which individuals live¹. Lifestyle also reflects

peoples' self- image or self -concept, the way they see themselves and believe they are seen by others.

It is a composite of motivation, needs and wants and may be influenced by such factors as culture, family, social class, or peer group.

Adopting or having a particular lifestyle suggests a conscious or unconscious choice between one set of behaviours and another set of behaviours.

Lifestyle diseases, also called diseases of civilization or longevity, are those diseases that appear to increase in frequency as countries become more industrialized and people live longer².

A healthy lifestyle leaves the individual fit, energetic and at reduced risk of disease, depending on the choice one makes about his/her daily habits.

THE EFFECT OF PHYSICAL EXERCISE ON RISK OF CANCER

Regular physical activity has good effect on a variety of health outcomes³ Being physically active is a proper public health strategy that reduces disease and disability while enhancing quality of life with decreased risk of early death, high blood pressure, adverse blood lipid profile, heart diseases, type-2 diabetes mellitus, breast and colonic neoplasms³. Physically active adults are reported to have a lower risk of depression and cognitive decline than inactive adults⁴

On the other hand, being physically inactive or adopting a sedentary lifestyle is associated with increased weight gain and obesity with attendant health problems⁵.

Excessive weight gain is now recognized as a major health and social issue. Its importance in the production of disease is acknowledged in the technical report of the World Health Organization⁶. In the past, obesity was

considered to be more prevalent in the developed countries but there is now an upsurge in obesity even in the developing countries⁷. The reason for this may be abundance of relatively cheap foods, a decline in exercise and activity of daily living arising from availability of technology, safety fears and changes to our living environment⁸. Moreover, frequently patronizing fast food outlets is also associated with high energy intake and higher body mass index among adults⁹

Obesity is a well recognized risk factor for various chronic health problems such as cardiovascular diseases, hypertension, strokes, type 2 diabetes mellitus and osteoarthritis. Obesity has also been implicated as a risk factor for adenocarcinoma of the oesophagus. It is reported to be associated with reflux of acid from the stomach into the oesophagus with consequent damage to oesophageal epithelium^{6,10}. Excess weight gain is also reported to increase the risk of breast cancer in post menopausal women by about 50%^{6,10}. The probable mechanism is increased serum concentration of oestradiol and the reduction in serum concentrations of sex hormone binding globulin.

Risk of endometrial carcinoma is also reported to be about three times higher in obese women than in the non-obese¹¹. As with breast cancer, the risk of developing endometrial cancer in obese post-menopausal women is also said to be due to the increase in serum concentration of oestradiol and there is also an increase in the risk of endometrial cancer among obese pre- menopausal women¹¹. The possible explanation is that obesity in premenopausal women likely involves an increase in anovulatory cycles with consequent increased exposure to oestrogen that is unopposed by progesterone¹¹

Obesity has also been implicated as a risk factor for cancer of the kidneys accounting for

up to 30% of such cancers in both men and women¹².

THE EFFECT OF DIET ON RISK OF CANCER

Burkitt¹³ reported differences in faecal mass between individuals in rural Africa compared with industrialized western countries and suggested that the low rates of colorectal cancer in Africa were due to high consumption of dietary fibre. Moreover, reports from various studies have shown a strong association between consumption of meat and death from cancer of the colon¹⁴. Many mechanisms have been proposed to explain how meat consumption might increase risk of colorectal cancer.

The suggested pathophysiological processes include the contribution of saturated fat particularly in red meats to atherogenic or perhaps hyperinsulin pathologies¹⁵. The other suggested mechanism, is the conversion of ingested meat protein to endogenous carcinogenic or mutagenic n-nitroso compounds in the colon^{10,15}

Another likely mechanism is tissue damage resulting from the contribution of the increased caloric and heme content of meat to higher oxidative stress^{15,16}. Cooking meat at high temperature is reported to also lead to the formation of biologically important amounts of carcinogens and nitrites and related compounds including toxic polycyclic aromatic hydrocarbons¹⁷.

it has also been reported that diets contribute to the development of stomach (gastric) cancer¹⁸. Excessive salt intake has been implicated in the development of superficial gastritis and atrophic gastritis in the pathway to carcinogenesis¹⁸. It has also been proposed that protection against gastric cancer may be afforded by high intakes of fruits and vegetables which contain high concentration of vitamins C and E and polyphenols. These

compounds have been shown to inhibit the production of carcinogenic N-nitroso compounds in humans.

Results of epidemiological studies have shown that incidence rate of cancers of the oral cavity, pharynx and esophagus vary a great deal among populations^(10,18). For example, esophageal cancer is over a hundred times more common in parts of central Asia and Southern Africa than in most parts of Europe and West Africa. The main risk factors are the two lifestyle factors of alcohol and tobacco use which are more widespread in the developed countries^{11,18}. In some developing countries, however, alcohol and tobacco are less important, but chewing of betel nuts may be a risk factor in some regions. High intakes of fruit and vegetables are associated with a reduction in risk of these cancers.^{18,20}

THE EFFECT OF LIFESTYLE ON SPREAD OF INFECTIOUS DISEASE

Africa is a heterogeneous society made up of people with different lifestyle patterns. An example of such lifestyle pattern is the consumption of local alcoholic beverages way back before the industrial production and consumption of beer. Such local alcoholic drinks include *kunun Zaki*, *Pito*, *Jiko* and *burukutu* which are consumed in most urban and rural areas of Northern Nigeria.

Reports have shown that because of the specific social mixing patterns among people who consume these alcoholic beverages, there has been increased spread of tuberculosis among them^{21,22}. When they are drunk, their behaviours are usually characterized by shouting, sneezing, spitting and coughing. Such behaviours are known to promote aerosol spills in the air that can easily be inhaled by healthy persons resulting in the spread

of tuberculosis²¹.

EATING TO PROMOTE HEALTH

The ideal diet for preventing or fighting cancer is predominantly plant-based diet that includes a variety of vegetables, fruits and whole grains.¹⁸

There are many ways to add plant-based foods to the diet. A helpful visual reminder is to aim for a plate of food that is filled at least two-thirds with whole grains, vegetables or fruits. Dairy products, fish and meat should take up about a third of the plate, and it should be noted that one need not be completely vegetarian.²³

Another benefit of eating plant-based food is that it will also increase the fibre intake.

Fibre cannot be digested by the body and as such it keeps the digestive system clean and healthy. It assists food to move faster through the digestive system and in the process moves cancer-causing compounds out before they can create harm.²⁴ Fibre is found in fruits, vegetables, and whole grains. The more natural and unprocessed the food, the higher it is in fibre. High-fibre cancer fighting food include brown rice, blackberries, citrus fruits, kidney beans, black-eyed peas, spinach, dark green leafy vegetables, tomatoes, carrots and potatoes.

A lifestyle pattern that includes a very low meat intake is reported to be associated with greater longevity.¹⁵ It is known that meat lacks fibre and other nutrients that have been shown to have cancer-protective properties.

What meat does have in abundance is fat made up of very high level of saturated fat and high fat levels have been linked to higher rates of cancer. It is thus advisable to keep meat to a minimum as low as 10 - 15 per cent in the diet. Red meat should be consumed sparingly and the portion sizes should be able to fit in the palm of the hand. It is best to choose leaner meats such as fish, chicken or turkey and as much as possible, avoid such processed meats

as hotdogs and sausages.²⁵

It is also advisable to choose fat wisely and eat it in moderation. The best fats are unsaturated fats, which come from plant sources and are liquid at room temperature. Primary sources of such fats include olive oil, canola oil, avocados and nuts. It is best to cook with olive oil instead of regular vegetable oil and canola oil is especially good for baking.

Recent reviews of published data conclude that consumption of tree nuts can reduce fat level by 2 to 19 percent compared with low fat and western diets.^{26,27} Nuts are calorie-dense and approximately half of their weight is liquid fat (oil). The fat is very rich in mono and polyunsaturated fatty acids (except the coconut which contains predominantly saturated fats). Walnuts are especially rich in linolenic acid, which is a precursor of omega-3 fatty acids. As a result, nuts reduce LDL cholesterol (Harmful fat), increase HDL cholesterol (Good fat), and protect against arteriosclerosis. The recommended amounts range from 1 to 3 Oz per day, at least five days per week¹⁸

It is also good to focus on omega -3 fatty acids which assist in fighting inflammation and are known to be beneficial in cardiovascular health.

Good sources include salmon and tuna. It is advisable to trim fat off meat when eating and to avoid eating the skin of the chicken. Eating fish once or twice a week is also beneficial. Good choices include salmon, sardines, herring and black cod. Limiting fast foods, fried foods and packaged foods which tend to be high in trans fats is also beneficial. Such foods include potato chips, French fries and doughnuts.⁹

It is also best to boost the body's antioxidants. Antioxidants are powerful vitamins that protect against cancer and assist the body cells to function optimally. Fruits and vegetables are the best sources of anti-oxidants such as beta-carotene, vitamin C, vitamin E and

Selenium. It is best to eat at least some raw fruits and vegetables since these have the highest amount of vitamins and minerals.

When cooking vegetables it is best to steam until just tender by using a small amount of water. This process preserves more of the vitamins and overcooking vegetables leaches the vitamins and minerals out.

There is a substantial potential for preventing cancer through diet. The modification of dietary habits could also have an impact on the risk of other diseases, particularly cardiovascular diseases.^{20,25}

EXERCISING TO PROMOTE HEALTH

Evidence indicates that regular physical activity is safe and helps improve functional capacity.³ It is strongly recommended that adults should engage in a variety of aerobic physical activity throughout the week. The following are examples of aerobic activities namely, bicycle riding, dancing, swimming, walking, jogging, vacuuming, tennis or racquet ball, racking or pushing a lawn mower. It may be necessary to start out with light-intensity activity that lasts less than 10-minutes and slowly increase the duration and the number of days a week the person is active.^{3, 25} Some individuals may necessarily require more physical activity than others to sustain a healthy body weight. If such is needed, the amount of aerobic physical exercise should be gradually increased and energy intake reduced to achieve good energy balance and healthy weight.^{3,28}

Conclusion:

The past decade has seen an expansion of epidemiologic and clinical research on the role of certain lifestyle choices in the aetiology of certain diseases and the absence of some. Regular physical activity is now a proven public health strategy that reduces disease and disability while improving quality of life particularly in older persons.

Nutritional epidemiology has also contributed significantly to our understanding of possible

relationships between diets and disease. Some foods once considered to be unhealthy simply because of their fat content (example nuts) have become important parts of diets designed to lower blood pressure, serum cholesterol, weight control and to achieve secondary prevention of coronary artery disease (CAD) besides the flavour, variety and texture it adds to our dishes. Ongoing investigation that will further characterize important exposure periods (e.g. in utero and early life exposure) and classify associations within the context of genetic susceptibility will continue to advance our understanding of the Pathophysiology of complex diseases and support further recommendations for disease prevention. At present, however, prudent advice is to maintain a healthy weight, restrict alcohol consumption, and select a conventionally balanced diet along with avoiding a totally sedentary lifestyle.

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