

Physical Exercise and Its Impact on Diabetes in Uganda

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Mini Review

Diabetes is a non-communicable disease linked to reduced or diminished insulin levels, sensitivity, and mode of action. It can be easily defined as a disease that affects the body's ability to produce adequate insulin. This disease is a growing concern in Uganda since out of the approximately 45.85 million people within the population, 1.4 million have been diagnosed with the disease. According to recent statistics, Uganda has a 4.1% rise in the prevalence rate for type I and II diabetes in 2021. Recent research has found that the onset of this disease is due to numerous factors including obesity, age, sex, genetics, pregnancy, smoking, and hypertension. For the most part, diabetes is a lifestyle disease meaning many of those affected can easily manage the disease by changing their regular habits. The Center for Disease Control (CDC) estimates that approximately 90-95% of those diagnosed with diabetes have type II (mellitus). It is a significant find especially in the context of Uganda because it shows that the level of activity and food intake has drastically changed. There are three types of diabetes including; type I and II, and gestational diabetes. All of the above diabetes types revolve around the body's inability to effectively manage glucose intake. Type I manifests in early childhood often due to the production of little or no insulin at all. The second type of diabetes is caused by insulin insensitivity due to an unhealthy lifestyle. Eating meals with a high carbohydrate and fat content; the problem with this is, the body's supply of insulin may become insufficient or even simply not work appropriately.

With gestational diabetes, it is a female issue that surfaces during pregnancy and manifests as an inability to produce adequate insulin. For every 100,000 individuals living in the country, 40.31 of them die because of diabetes. This shows that healthcare providers need to step up their game in terms of informing Ugandans about diabetes. As much as Diabetes is a growing concern in Uganda, the Diagnosis of the disease is not at the required status. In developed countries, diagnosis of diabetes is quick and often done during the early stages of the disease. In Uganda however, it is only when the disease is in the latter stages that medical workers raise concerns. A study championed in 2016 showed that there is an issue with diagnosing the disease since 49% of people living with diabetes have not been diagnosed.

How does Physical Exercise Play a Role?

According to the World Health Organization, physical exercise refers to any movement undertaken by an individual at any given time. This could be done as part of an individual's job, leisure, or transportation. Movement engages the body and thus activates metabolic processes concerning breaking down sugar. Physical exercise has several benefits for people with diabetes, including improving insulin sensitivity and glucose tolerance, reducing the risk of heart disease, and increasing overall fitness and well-being. Exercise can help to lower blood sugar levels by increasing the uptake of glucose by muscles and reducing insulin resistance. It also helps to control weight and reduce the risk of obesity, which is a major risk factor for the development of type 2 diabetes. For any of these

benefits to take effect, individuals need to put into perspective the intensity of the exercise. There are two levels of physical exercise namely; high and low intensity. The World Health Organization recommends different guidelines for different age groups cutting across the global population concerning intensity. Children (5-17 years) need 60 mins of moderate to intense exercise per week. Three days out of the week should be high-intensity exercises. Adults need about 150-300 minutes of moderate-intensity exercise per week. It is further recommended that at least 2 of those days be dedicated to strength-building exercises. Throughout history, human beings have benched their survival on constant movement. From gathering fruit to hunting, then to farming people have never been in situ for a long period. Thus, biologically, we are required to keep moving to maintain homeostasis. Physical exercise, therefore, is not only used to reduce weight, but also to trick an individual's DNA into showing positive attributes by changing the action of epigenomes. Epigenomes are the various chemical changes collected on top of DNA or genome. While diabetes currently affects a younger and thinner demographic in African countries, physical exercise weekly is necessitated to change the representation of the genome. Therefore, it is seemingly a concern for global health organizations that people keep active.

How Physically Active are Ugandan Citizens?

Management and treatment protocols for diabetes in Uganda are focused on nutrition and exercise for a majority of the reported cases. Those diagnosed with the disease are coached on healthy living which includes nutritional stipulations along with exercise. While health workers focus on these two aspects along with medication, the bulk of the patients cannot follow their prescribed regime. Many of the patients prefer a sedentary lifestyle and a culture that promotes unhealthy eating as a sign of prestige culturally. Although changing lifestyle, especially for those living in urban areas of Uganda, like the capital Kampala is difficult, patients need to put forth a greater effort to elongate their lives. In Uganda, the level of physical exercise is

rather higher than in other developed countries since people do a lot of menial jobs and engage in numerous hobbies. This is an agricultural country with a high farming population that uses low-technological based tools. Things like mechanical plowing machines are rarely used which means manual labor is utilized. The majority of rural dwellers maintain a high-intensity physical exercise regime daily due to the amount of work they engage in. On the contrary, those in areas like Kampala spend a longer time seated. Therefore, the level of activity differs depending on the area in Uganda; it is a fifty-fifty situation.

How has and can the Government Help Increase Physical Activity and Exercise?

Currently, physical exercise is not taken seriously by the general public. The government of Uganda has a crucial role to play in addressing the diabetes epidemic and promoting physical exercise as a means of prevention and management. This could include providing funding for community-based exercise programs, promoting physical activity through education and media campaigns, and improving access to sports facilities and equipment. In addition, healthcare providers and community leaders can help to raise awareness about the importance of physical exercise for managing diabetes and encourage people to adopt healthy lifestyle habits.

In conclusion, physical exercise is an essential component of diabetes management and prevention in Uganda. It has been shown to have a positive impact on blood sugar control, reducing the risk of heart disease, and improving overall health and well-being. The government, healthcare providers, and community leaders can play a key role in promoting physical activity as a means of managing diabetes and reducing the burden of this disease in the country. By working together, we can help to create a healthier and more active population, free from the debilitating effects of diabetes.

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