Physical Health Research: The outcome of Africans Chattel Enslavement circa 1500-1800.

A presentation of the suggested link between the legacy of the enslavement of Africans in the Caribbean and the propensity of their descendants to develop debilitating diseases

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Introduction

The questions we seek to address are the following:

What are the physical issues related to psychological, physiological and mental dysfunction resulting from enslavement?

and

To what extent is there a direct link between chattel enslavement and debilitating illnesses which are prevalent among those from the African-Caribbean diaspora such as diabetes, alcohol addiction and sickle cell anaemia?

Physical illnesses

Physical illness occurs due to some of the following:

Trauma
Separation and loss
Stress

In the case of investigating the impact of chattel enslavement on their descendants, the psychological issues that cause physical dysfunction are cited as:-

Post traumatic slavery syndrome
Separation and loss
Fatherlessness
Family break up
Incest / interbreeding
Genetics and so on

Our focus today will be on diabetes and its disproportionate occurrence among people with an African or African-Caribbean phenotype and particularly people living in the diaspora in Britain, although references will be made to those living in North America and the Caribbean.

Setting the scene

The origin of the term 'diabetes'

The term diabetes is the shortened version of the full name diabetes mellitus. Diabetes mellitus is derived from the Greek word diabetes meaning siphon or to pass though. And the Latin word

mellitus meaning honey or sweet. This is because of the excess sugar that is found in the blood as well as in the urine of sufferers. In the 17th century it was known as the “pissing evil”.

The term diabetes was probably coined by Apollonius of Memphis around 250BC. Diabetes is first recorded in English, in the form diabete, in a medical text around 1425. It was in 1675 that Thomas Willis added the word “mellitus” to the word diabetes. This was because of the sweet taste of the urine. This sweet taste had been noticed in urine before by ancient Egyptians, Chinese, Indians, Greeks and Persians as evidenced from their literature.

The discovery of the role of the pancreas

In 1889 Joseph von Mering and Oskar Minkowski discovered the role of the pancreas in diabetes. They found that dogs whose pancreas was removed developed all the signs and symptoms of diabetes and died shortly afterwards.

In 1910, Sir Edward Albert Sharpey-Schafer found that diabetes resulted from lack of insulin. He called the chemical regulating blood sugar insulin from the Latin word “insula” meaning island, in reference to the insulin producing islets of Langerhans in the pancreas.

Starvation treatment

In 1919 Dr. Frederick Allen of the Rockefeller Institute in New York published his “Total Dietary Regulations in the Treatment of Diabetes” that introduced a therapy of strict dieting or starvation treatment as a way to manage diabetes.

Discovery of insulin

In 1921 Sir Frederick Grant Banting and Charles Herbert Best repeated the work of Von Mering and Minkowski and demonstrated that they could reverse induced diabetes in dogs by giving them an extract from the pancreatic islets of Langerhans of healthy dogs. Banting, Best and their colleague, Collip a chemist, purified the hormone insulin from the pancreases of cows at the University of Toronto, Canada. This led to the availability of an effective treatment for diabetes in 1922. Banting and his laboratory director Macleod received the Nobel Prize in Medicine in 1923.

History of Diabetes

Banting and Best made the patent available free of charge so that millions of diabetics worldwide could get access to insulin. And in January 1922, Leonard Thompson, 14, a charity patient at the Toronto General Hospital became the first person to receive an injection of insulin to treat diabetes. Thompson lived another 13 years before dying of pneumonia at age 27.

Differentiating type 1 and type 2 diabetes

It was in 1936 that Sir Harold Percival (Harry) Himsworth in his published work differentiated type 1 and 2 diabetes as different entities.

Biosynthetic human insulin

In 1982 the first biosynthetic human insulin – Humulin – that is identical in chemical structure to human insulin and can be mass produced was approved to market in several countries.

Development

From our research, we know that the life expectancy of Africans on arrival on the plantation in the Caribbean during the height of the slave trade circa 1600, was approximately 7 years. We also know that whilst working predominately in the sugar cane fields on the various islands, there was a propensity to eat the sugar cane whilst cutting it. It is well documented that enslaved people would produce alcohol from sugar cane and would drink this to ameliorate their condition.

We now know that there are two type of diabetes as proven earlier and we know more about how they differ.

Type 1 diabetes is caused by the immune system destroying the cells in the pancreas that make insulin. This causes diabetes by leaving the body without enough insulin to function normally.

This is called an autoimmune reaction, or autoimmune cause, because the body is attacking itself. [This could be due to unvented internal rage and anger]

There is no specific diabetes causes, but the following triggers may be involved:

- Viral or bacterial infection
- Chemical toxins within food
- Unidentified component causing autoimmune reaction

Underlying genetic disposition may also be a type 1 diabetes cause.

Type 2 diabetes causes are usually multifactorial, that means that there are many causes involved in diabetes. Often the most overwhelming factor is a family history of type 2 diabetes. And this is the most likely cause type 2 diabetes.

In **type 2 diabetes** the pancreas does not produce enough insulin, or their body does not react properly to insulin. This is called insulin resistance. Insulin is used by the body to manage glucose (sugar) levels in the blood and helps the body use glucose for energy.

There are a variety of risk factors for type 2 diabetes, any or all of which increase the chances of developing the condition.

These include:

- Obesity
- Living a sedentary lifestyle
- Increasing age
- Bad diet
- Other type 2 diabetes risk factors can be pregnancy or illness.

Ethnic Diabetes differences

We are aware that diabetes is a disease that affects people across the world; however from empirical data gathered over a period of 20+ years, it is clear that people from an African-Caribbean and South Asian backgrounds have a greater propensity to develop type 2 diabetes than their European counterparts by the age of 80. This paper will focus on a few projects following the onset of diabetes in predominately Caribbean heritage folks in the UK and the Caribbean. The focus will be on the Barbados Eye Study project (BES) from 1988-1992 funded by the National Eye Institute. Its cohort was 4,709 people with ages ranging from 40-84.[1] The remit of this project was to examine the prevalence of diabetes among the black population in Barbados.

The evidence from the Barbados Eye Study reveals that onset of diabetes tends to occur earlier in black people, between the ages of 40-50 for men and women compared to mid-60s in other ethnic groups and tend to increase steadily with age if people survive. Diabetes is particularly prevalent in Barbados as it is known as the amputation capital of the word.

The other project cited, is the ongoing UK research project SABRE[2] and the SABRE revisited medical research projects, conducted in the London Borough of Brent, UK. This started in 1988 and has a cohort of 5,000 including; Europeans, Indian Asians and African-Caribbean men and women. The remit of the project is to monitor the onset of diabetes across the three ethnic groups to understand why diabetes occurs in some people and not in others. According to the project lead, Professor Nish Chaturvedi, they aim to extend the research to include the examination of the roles of genes and environment at different stages of life in causing diabetes.

At a Diabetes UK Professional Conference in 2015 researchers from the SABRE project proved that the **link between metabolite profiles and insulin resistance and diabetes is stronger in ethnic-minority groups**, potentially leading to earlier and more aggressive diabetes and worse clinical outcomes.

Other presenters indicated that diabetic retinopathy is more common in South Asian and African Caribbean individuals with diabetes and in turn is associated with stroke and subclinical cerebrovascular disease, independent of conventional risk factors[3].

Professional researchers across the UK are seeking to find solution to address the effects of diabetes on millions of people around the world. At UCL researchers are proving that diseases such diabetes tends to affect black people and particularly those from an African Caribbean descent more than their European counterparts. Essentially if you have a Caribbean heritage you are more prone to diseases such as hypertension, strokes, and blindness.

This paper asserts that the ongoing development of epigenetics will prove that the root causes of these physical diseases are located in the past and in particular what happened to people of African descent during the enslavement circa 1500-1800.

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[1] International Journal of Epidemiology 2002; 31:234-239.

[2] The Southall And Brent Revisited Study is a medical research study started in 1988 in West London and is funded by two charities; The Welcome Trust and The British Heart Foundation. Published in J Hpertens. 2016 Feb; 34(2): 282-289.

[3] Diabetes UK Professional Conference, March 13, 2015; London, UK. Abstracts A75-A80.