

Westernised Diets and Epigenetic Health: Awareness Among Bangladeshi Teenagers

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Abstract

This study explores the attitudes and awareness of Bangladeshi teenagers towards the genetic impacts of diet choices, with an emphasis on epigenetics (the study of how genes are turned on and off without changing the actual DNA sequence). Epigenetic mechanisms such as DNA methylation and histone modification are central pathways via which nutrition can affect gene expression, which influences overall health, susceptibility to diseases and even life span. Studies have shown that a parent's or even a grandparent's diet can affect the genetic expression of future generations. A 'typical western diet' simply refers to a diet high in refined sugars, saturated fats and ultra-processed high-calorie foods. Such nutritional profiles correlate strongly with obesity and cardiovascular diseases, and also epigenetic dysregulation of genes. Adolescents are one of the primary consumers of western fast food, and hence, as the influence of westernised dietary practices increases in South Asia, understanding how adolescents perceive the relationship between genes and diet becomes essential. For this investigation, both quantitative and qualitative surveys were conducted with 76 Bangladeshi high school students using closed-ended and open-ended questions distributed via Google Forms. The findings revealed a significant knowledge gap among teenagers regarding genetic health, but also suggest high levels of interest among the participants to learn about epigenetics.

Introduction

The introduction of agriculture and animal husbandry about 10,000 years ago has brought significant changes to the human diet, though initially subtle, but changed rapidly with the industrial revolution, bringing ultra-processed food and preservatives about 200 years ago to the Western society. The Western diet primarily consists of energy-dense and nutrient-poor foods such as fast foods, soft drinks and highly processed snacks, which are regularly consumed in the modern world [1].