

# Multiple Nutrition Education Strategies as an Approach to Reduce Risks of Unhealthy Diets towards the Reduction of Non-Communicable Diseases

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**Abstract**— The global burden of non communicable diseases is rising on the edge. Increasingly, globalization has given rise to unhealthy diets which is one major cause for non communicable disease. Lack of adequate information and nutritional knowledge has largely lead to unhealthy diets in populations. Most nutrition education theories and models lack the adequate matching to individual characteristics to effective behavioral change.

An innovative nutrition education model comprising of multiple nutrition education strategies was designed and developed, as an initiative to induce behavioral change towards healthy diets, to reduce risks of non communicable diseases. The model takes an incremental approach towards nutrition education through the use of different learning techniques and perceptive influences to change dietary behavior of diverse populations.

**Index Terms**— non-communicable diseases, unhealthy diets, nutrition education.

## I. INTRODUCTION

Non Communicable Diseases (NCD) are diseases of long duration and generally, slow progression [1]. It is increasingly becoming a global burden that hinders physical and emotional stability of affected individuals, while increasing national healthcare costs, depleting the quality and quantity of the labor force, thereby largely diminishing the economy of countries.

Four prominent NCDs are cardiovascular diseases, cancer, chronic respiratory diseases and diabetes [2]. Distinguished by its non-infectious causes, World Health Organization (WHO) (2011) determines that most prominent NCDs are linked by four major modifiable behavioral risk factors notably unhealthy diet, physical inactivity, increased consumption of tobacco and alcohol, and further asserts that if major risk factors for NCD were eliminated, at around three-quarters of heart disease, stroke and type-2 diabetes would be prevented, and 40% of cancer would be prevented [1].

Unhealthy diets amplify the impact on poor chronic health by raising preventable biological risk factors to harmful levels that is difficult to reverse. These are increased blood sugar, increased blood pressure, increased blood cholesterol, overweight and obesity. This research addresses the behavioral factor of unhealthy diets with the purpose to encourage healthy

behavioral change of diets. In fact, Director-General of WHO, Dr. Margaret Chan (2011) claims, “people do not need to smoke, but they do need to eat and drink”. Thus, diet is identified as an important need that requires continued attention [3].

## II. BACKGROUND STUDY OF PROBLEM DOMAIN

### A. Relationship of Diet and NCDs

There is remarkable evidence for direct association between diet and NCDs. Both under-nutrition and over-nutrition plays a role in the development of NCDs [4], whereas obesity resulting from weight gain are associated with an increased risk of diabetes; however intentional weight loss reduces the risk that overweight people will develop diabetes [5].

Main causes for unhealthy diets arise from negative health-related effects of a globalization trend known as the “nutrition transition”, where populations in low and middle income countries consume diets high in total energy, fats, salt and sugar [6]. Specifically, these major components of food have been penalized, because trans-fatty acids harm cardiovascular health and dietary intake of sodium raises blood pressure and causes heart disease and stroke [4], while excessive consumption of sugar contributes to a global obesity pandemic, and critically altering individuals’ blood pressure as well as causing significant damage to the liver [7].

### B. The problem of unhealthy diets

Opportunely, modification of diets towards healthier food choices significantly improves population health in relation to NCDs [8]. However, positive diet and lifestyle changes were not adopted as frequently as they could be, at least partly because even small changes were perceived as requiring huge personal effort [9] research highlights, adoption of healthy food choices was limited by many barriers, primarily by the lack of nutritional knowledge [10] of individuals. In support with this, information and knowledge were equally important with regard to making healthy food choices [11]. Nutritional strategies concerning the adoption of healthy dietary patterns were best effective when supported by nutrition education, thereby overcoming many barriers acting against healthy diets. Interestingly, nutrition education has proven to be effective in