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## **Factors Affecting Citizens to Select Healthy Diet in Hong Kong**

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### **ABSTRACT**

This article discusses the significance of a healthy diet in preventing malnutrition as well as noncommunicable diseases which include diabetes, heart disease, stroke, and cancer. Unhealthy eating habits and insufficient exercise are the two main threats to global health. The article advocates adhering to certain national or worldwide dietary guidelines, such as the Mediterranean diet or the Healthy Eating Index, to encourage healthy eating. This article reviews a few academic works to pinpoint the sociological, biological, and business aspects that influence individuals in Hong Kong to choose healthy diets. This article suggests encouraging healthy eating while respecting and preserving cultural traditions and practices, creating an environment that supports healthy eating, and making sure that healthy food options are easily accessible and reasonably priced while considering a variety of sociocultural preferences.

**KEYWORDS:** Healthy diet, sociological factors, biological factors, business factors, government policy, education

## **1 INTRODUCTION**

The prevention of noncommunicable illnesses which include diabetes, heart disease, stroke, and cancer as well as malnutrition in all its manifestations is aided by a good diet. Conversely, the two biggest dangers to health worldwide are an improper diet and insufficient exercise (World Health Organization, 2020). There are specific national or international dietary standards for a healthy diet method, such as the Healthy Eating Index, the Dietary Approaches to Stop Hypertension diet, the Mediterranean diet, and the Okinawan diet, or on foods or diets linked to a particular health result. These eating habits have been examined in relation to several health conditions, including cancer, Alzheimer's disease, and cardiovascular disease although less is known about their functions in intrinsic capacity (Yeung et al., 2021).

Hong Kong a developed city, more and more people are intended to have a healthy diet. However, there are several factors that affect the choice of healthy diet among Hong Kong citizens which include socioeconomic factors, sociocultural factors, biological factors and business factors. This article reviews several literatures to identify determining factors and evaluate how these factors affect Hongkongers to select healthy diets. This article also gives recommendations to the government and citizens to promote healthy diets among different groups of people in Hong Kong.

## **2 OBJECTIVES OF THE STUDY**

The objectives of this study are as follows:

1. To identify the factors affecting people to select healthy diets in Hong Kong.
2. To apply Fishbone Diagram to analyse the development of healthy diets in Hong Kong
3. To give recommendation to promote healthy diet in Hong Kong.

## **3 LITERATURE REVIEW**

### **3.1 Socioeconomic Factors**

Cities and countries that have advanced economies and greater levels of education have a significant degree of economic disparity (Peng, 2018). Studies revealed that higher occupational social class was strongly linked to higher food expenditure, which in turn was linked to healthier shopping. Yet among lower socioeconomic groups, less expensive food is probably a major factor in the less healthful eating choices they choose (Pechey & Monsivais, 2016). The amount of processing that each food item underwent was revealed by a research study that examined more than 50,000 food items distributed in three grocery stores: Walmart, Target, and Whole Foods. More than 70% of food produced in the US is ultra-processed, and that meals that are ultra-processed on average cost more than 50% less than meals that are lightly processed (Ravandi et al., 2022). A person's choice of supermarket may be influenced by variables directly related to their budget. Financial restrictions, for instance, may be important variables in addressing socioeconomic differences in food purchase decisions, for instance, the perceived expense of healthy diets (Pechey & Monsivais, 2016).

As a result of altered family structures, processed food consumption has also increased. Many people are committed to working even when women are obliged to work in high-income nations since everything is competitive there. Women make approximately 80% of the workforce in the United States (Moss, 2013). The problem is that women often lack the knowledge necessary to prepare a supper utilising fresh foods (Moss, 2013). People rely more on processed food from supermarkets, convenience stores, and grocery stores as a result. It is more common for parents to use fast food like corn chips, frozen meals, frozen cake, and other frozen treats to control their kids' eating habits, which contributes to the development of

children's compulsive eating habits (Gearhardt et al., 2013; Moss, 2013). The population of food addiction is turning to teenagers and become very serious.

### 3.2 Sociocultural Factors

Sociocultural factors have a significant role in influencing people's food preferences and eating behaviours, which in turn affects their purchase behaviour. These variables include a wide variety of aspects, including demographics like age, sex, education, occupation, income, marital status, location, and ethnicity, religion, social class, reference group, and family. It is critical to remember that attitudes and views of individuals act as mediators between these sociocultural factors, which are not independent of one another (Roudsari et al., 2017).

Research has demonstrated that sociocultural factors have a key role in the choice of a variety of meals throughout the world. Given that Hong Kong is a developed city with a diversified population, it is astonishing how diversity and a variety of cultural and ethnic origins are related (Wang et al., 2017). With a wide variety of cuisines accessible, from traditional Chinese meals to Western-style fast food, the city has developed a distinctive culinary culture. But while though Hong Kong's sociocultural variables may support a healthy diet, it is crucial to understand that they may also lead to the consumption of unhealthy diets. For instance, some cultural traditions may place a higher emphasis on eating foods high in fat or sugar during festivals or festivities, which might result in unhealthful diets (Roudsari et al., 2017).

### 3.3 Biological Factors

On the Yale Food Addiction Scale (YFAS) sugar is the component with the highest score. A fast-food meal's sugar level is increased 10-fold when a soft drink is added. Just the use of soft drinks — not the consumption of animal fat products — is connected with changes in BMI, according to a multivariate study of fast-food transactions. Fast food consumers obviously consume more soda, even though obesity and disorders associated with metabolic syndrome have been linked to soda consumption separately. Sugar's analgesic properties have been employed in new-born circumcision, indicating a connection between sugar and endogenous opioid peptide tone. Anecdotal accounts from those who identify as food addicts state that they feel "irritable", "shaky", "anxious", and "depressed" during sugar withdrawal; the same symptoms are also present during opiate withdrawal. According to other research, sugar can be used to treat psychological dependency (Lustig, 2020).

From conventional wisdom, using salt is more of a learned preference than an addiction. People probably develop a liking for salty foods early in life. New-borns who are four to six months old develop a taste for salt based on the amount of sodium in their diet, breast milk, and the water used to mix their formula. The craving for salty meals is related to higher calorie consumption because energy-dense fast foods are disproportionately rich in salt, in part as a preservative to prevent depreciation. Some have questioned recent public health campaigns to drastically reduce salt consumption on the basis that human sodium intake is "physiologically fixed" (Lustig, 2020).

Highly processed foods with additional fat and/or refined carbohydrates were more likely to be connected to behavioural symptoms of compulsive eating, according to the findings of a research (Schulte et al., 2015). Moreover, meals with a high glycaemic load have been explicitly associated to eating disorders that mimicked addiction in individuals who displayed significant "food addiction" symptoms. As evidenced by the significance of dose and rate of absorption in the addictive potential of illegal drugs, individuals who engage in eating patterns

that are similar to addiction may experience a considerable blood sugar spike after consuming meals with a high glycaemic load. The combined findings provide preliminary evidence in favour of the foods and food traits associated with “food addiction” as well as for the proposed analogies between the pharmacokinetics of drugs of abuse and highly processed meals (Schulte et al., 2015). Since the brain functions like a gigantic prediction engine, it alters the way we eat when we consume a lot of processed food over an extended period. This is because the brain continuously compares the present to the past to make predictions about how it will fare in the future (Schatzker, 2021).

### **3.4 Business Factors**

Through food processing, agricultural products are turned into foods for human consumption. There are many unit operations that can be applied to the conversion at an industrial scale to produce manufactured food products and food ingredients, increasing the stability of their shelf life to enable distribution through the food value chain and maximising the profit to the business. Food additives are chemicals that are added to food to maintain or enhance the food’s freshness, flavour, texture, or appearance. A few food additives that have been used for food preservation for a very long time are salt, sugar, and sulphur dioxide. Numerous food additives have been developed over time to meet the demands of food production in both industrial processing and gourmet meal preparation (Knorr & Augustin, 2021; World Health Organization, 2018). A wide range of substances may be added to enhance flavour or be used as processing aids.

This was referred to as the ‘bliss point’ by Howard Moskowitz, or the moment at which the consumer felt that the levels of richness, sweetness, and salty were exactly perfect. A brand-new category of “craveable” meals was produced when the processed food industry gave its bliss point compositions a crunchy mouth feel. Consumers, especially youngsters, became madly enamoured with a wide variety of addictive chips, dry-sweetened cereals, candies, cookies, fried meals, and even spaghetti sauces. As a result, processed food industries saw a huge increase in earnings. Demand for the consumption of more conventional, home-cooked meals with fresh fruits, vegetables, and healthy grains started to decline as the popularity and consumption of craveable foods increased (Rao et al., 2018).

### **3.5 NOVA Food Classification**

According to the level of processed food, NOVA has divided foods into four categories: Unprocessed and minimally processed foods; Processed culinary ingredients; Processed foods; Ultra-processed foods (Petrus et al., 2021). Unprocessed foods fall under the category of naturally edible parts of plants and animals. Foods that have had little processing have undergone small alterations largely for preservation purposes; however, these adjustments have little to no effect on the food’s nutritional content; Processed culinary ingredients are those that have undergone light processing, such as pressing, refining, grinding, or milling. Usually, they are used to produce minimally processed dishes rather than being consumed on their own; Processed foods from any of the preceding two categories that have been processed typically have salt, sugar, or fats added; Ultra-processed foods are ultra-processed include artificial colours and tastes and preservatives that support shelf stability, maintain texture, and improve palatability in addition to salt, sweeteners, or fat. The ultra-processed cuisine is created by a few processing processes employing various components. It is believed that certain meals are created purposely to boost cravings, causing consumers to overeat them and buy more. Most of the time, they require little further preparation before eating. These foods tend to be poor in fibre and nutrients, however, not all of them are (Harvard School of Public Health, 2022).

### 3.6 Potential Risk of Having Unhealthy Diet

Processed food accounts for a significant portion of the global food industry and is becoming more and more common in our modern diets. Processed food intake, however, has been connected to several health issues that can have a lasting impact on healthcare. The use of processed meals has been linked in studies to increased levels of triglycerides, blood insulin, and blood pressure as well as subscapular skinfold, trunk fat, and other indicators of obesity. The risk of metabolic syndrome, diabetes, angina, high blood pressure, biological age, and decreased vitamin bioavailability has also been linked to a diet that strongly emphasizes ultra-processed foods (Menichetti et al., 2023).

The impact of processed foods on population health is significant, and this is evident in countries like the United Kingdom, where direct medical costs related to non-communicable diseases such as obesity amount to 1750 billion more of Hong Kong Dollar (HKD) annually (Ravandi et al., 2022). The situation in Hong Kong is particularly worrying, as unhealthy diets can lead to an increase in non-communicable diseases, which can further worsen the healthcare system. Therefore, it is essential to take proactive measures to address this issue and encourage individuals to adopt healthier eating habits.

## 4 DISCUSSION

### 4.1 Fishbone Diagram Analysis

There are four factors shown on the fishbone diagram (Figure 1) that might be the reasons why there is a small amount of citizens consume healthy diet in Hong Kong, including socioeconomic factors, sociocultural factors, biological factors and business factors. Biological factors are one of the major factors which contribute to affect Hongkongers to not selecting healthy diet. Literature review found different factors contribute to biological factors, for example business factors contribute to biological factors. Different processed food companies spend a lot of resources to investigate the ‘bliss point’ to let more people to addicted to that kind of processed food (Rao et al., 2018). To reach the ‘bliss point’ is a good approach to let the brain to be addicted to the food (Schatzker, 2021). So, the true root cause will be defined as biological factors contributed to why Hongkongers are not selecting healthy diet in their daily life.

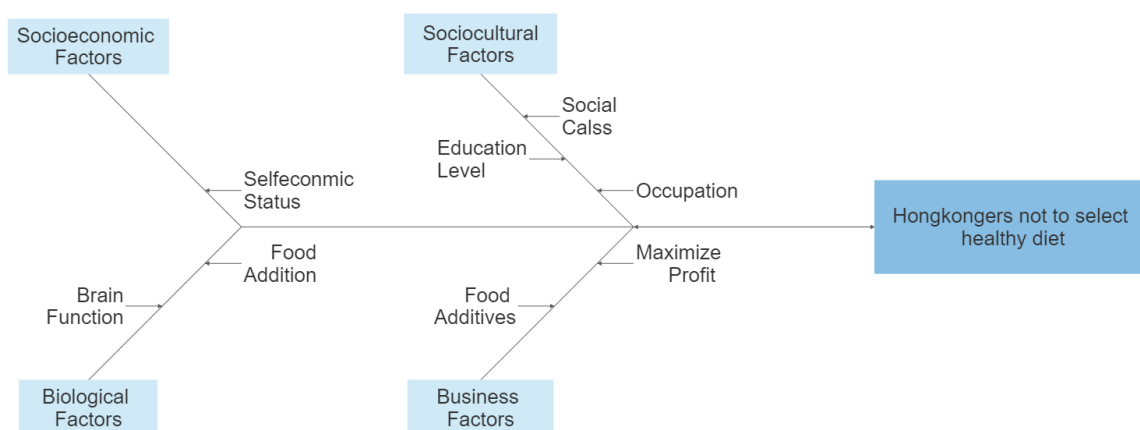


Figure 1: Fishbone Diagram

### 4.2 Busy Life Patten

Recent decades have seen the rise of megacities because of urbanisation and population increase. The living environment may be one of the most significant variables determining the quality of life of city inhabitants, even though dense urban fabrics and high residential density

suggest extensive interaction between man and environment (Ng et al., 2017). According to (Chan et al., 2021), persons with high socioeconomic level tend to work long hours. There are several occupations that need shift employment in Hong Kong including transportation, aviation, and health care. Diet has a significant impact on performance and health. Given that food intake has been demonstrated to be an external cue involved in entraining the circadian clock, primarily in studies of mice, the timing of meals has become a crucial field of investigation. Circadian rhythms control digestion, gastrointestinal motility, glucose homeostasis, and metabolic activities. It has been demonstrated that eating food at times that conflict with our circadian cycles can entrain rhythms in peripheral organs, such as the liver, and cause weight gain and obesity (Gupta et al., 2019). One of the factors influencing Hongkongers' consumption of a healthy diet is sociocultural influence. Additionally, the biological components are influenced by other factors. Therefore, the underlying root cause influencing people to choose a healthy diet is biological consideration.

### **4.3 Processed Food Evaluation**

Literature reveal that sugar is the component with the highest score on the Yale Food Addiction Scale and that it is linked to the development of addictive-like behaviours (Lustig, 2020). Similarly, the craving for salty meals is related to higher calorie consumption, and individuals who engage in eating patterns like addiction may experience a considerable blood sugar spike after consuming meals with a high glycaemic load. These findings suggest that highly processed foods with additional fat and/or refined carbohydrates, as well as meals with a high glycaemic load, are more likely to be connected to behavioural symptoms of compulsive eating. The government should work towards promoting the production and availability of healthy food options across the country. Therefore, to ensure that individuals have access to a variety of healthy food options, regardless of their income or location, this may include financial incentives for businesses to produce healthier food options, subsidies for low-income households to purchase healthy foods, or the introduction of community gardens and farmers markets to promote access to fresh produce in urban areas (Centers for Disease Control and Prevention, 2023).

### **4.4 Prevalence of Obesity Hong Kong**

The sharp rise in obesity in Asia has become a global epidemic that is affecting the health and wellbeing of millions of people. There are around 30% of the adult population overall and an additional 20% of adults in Hong Kong were overweight or obese in 2014–2015 (Hong Kong Association for the Study of Obesity, 2023). This trend is particularly worrying as obesity and childhood overweight has significant long-term and short-term effects on health and wellbeing. Studies have shown that being overweight during adolescence is linked to an 8.5-fold increase in hypertension, a 2.4-fold increase in the prevalence of high total serum cholesterol, a 3-fold increase in high low-density lipoprotein cholesterol, and an 8-fold increase in low high-density lipoprotein cholesterol in adults aged 27 to 31 years. Furthermore, there is compelling evidence that childhood obesity follows children into adulthood, where they experience linked health issues (Wang et al., 2017).

### **4.5 Socioeconomic Status**

Obesity in the parents has been found to be the main risk factor for childhood obesity. Overweight parents were more likely to have overweight children than non-overweight parents, which is consistent with the found family resemblance in terms of weight status. The study's strange ratios revealed that maternal body weight status had a bigger impact on the prevalence of overweight children than did paternal status, which may be because moms, as opposed to dads, had a greater influence on the family's food environment and kids' eating habits. In a

review on socioeconomic status and childhood overweight, it was shown that there was an inverse relationship between family socioeconomic status and child adiposity, even when the socioeconomic situation was stable and difficult to modify. According to a study, children from households with greater monthly wages were less likely to have overweight children because these families may have easier access to healthy food and exercise options (Wang et al., 2017). The choice of a healthy diet is influenced by socioeconomic level for Hong Kong residents.

## **5 RECOMMENDATIONS**

### **5.1 Government Policy**

To reduce the prevalence of obesity and cardiovascular diseases, the UK government recently introduced limitations on the promotion of foods high in fat, sugar, and salt, which are common features of ultra-processed food (Ravandi et al., 2022). This is a commendable move towards promoting healthier eating habits among the population. However, it is crucial to ensure that any such measures do not disproportionately affect smaller businesses or result in unintended consequences such as increased food waste or reduced availability of healthy options. On the other hand, any limitations on the promotion of ultra-processed foods should be implemented in a way that does not compromise the availability of healthy food options. It is essential to ensure that individuals have access to a variety of healthy food options, regardless of their income or location. Therefore, the government should work towards promoting the production and availability of healthy food options across the country. This could include financial incentives for businesses to produce healthier food options, subsidies for low-income households to purchase healthy foods, or the introduction of community gardens and farmers markets to promote access to fresh produce in urban areas (Mattei & Alfonso, 2020).

To give customers clearer information about the nutritional value of food items, the government can enact rules for food labelling. For instance, mandating food manufacturers to clearly indicate serving sizes and nutritional information. Informed choices regarding the foods they buy and eat may be made by consumers thanks to this. The inability of people to make educated judgments and healthier food choices is further hindered by the exaggerated serving sizes and minor changes in nutritional profiles stated in small characters on food containers. These factors further hide evidence of ultra-processing. As a matter of fact, the stated amount and unit differ from product to product when it comes to nutrition information, which are not given per 100 grams. To enable customers to execute efficient replacement methods that seek minimum dietary modifications, all this richness of information is being converted into an actionable score (Ravandi et al., 2022). This will help consumers make better food choices. The general people will now comprehend what they are selecting because of this move.

### **5.2 Provide Nutrition Education**

The education system in schools should teach students about nutrition so that people may carry over many of the healthy principles they learn in youth into adults (Roudsari et al., 2017). The formal curricula of schools should include nutrition instruction, as should informal programs that are part of extracurricular activities or, less directly, through the conditions of the school cafeteria. The education might include lectures on cooking techniques, workshops, and reading material on dietary guidelines. The process of imparting the knowledge of nutrition to a person or group is known as nutrition education. To process the recommendation, Education Bureau should give more training for teachers to understand more about the selection of healthy diet for students (Piscopo, 2019). The creation of long-lasting behavioural changes is the main goal of this kind of diet, not information and facts.



To perform a stronger, more comprehensive and creative effort at nutrition education is needed. Different aspects should be included in nutrition education. Many significant as well as less serious health issues are caused by individual choices and lifestyles, including eating patterns. For example, two lifestyles could be helpful to control the risks to getting overweight or obesity, which are drinking water before meal (Parretti et al., 2015) and reading the food label before buying food. It is directed at improving the health of groups whose behaviours are put. After behavioural change, there may have a long-term change in the body, to prevent the overweight and obese happen, which to live a healthy life.

Changing one's lifestyle may have a positive impact on one's health, and dietary patterns should inform the public that different food types differ in terms of both nutritional content and flavour appeal. The typical customer frequently struggles with making the best meal decisions among such a variety and lacks knowledge on how to do so. Therefore, there is a huge need for education to enable consumers to sensibly choose an adequate diet from the abundance of food; education for low economic status is also required to help low-income consumers make economical food choices, that is, to save money while receiving the best nutrition (Centers for Disease Control and Prevention, 2023; Palmer et al., 2020). Nutrition education is good for the general public to understand how to select healthy diet. Thus, improve the awareness for to eat healthier.

## **6 CONCLUSION**

In conclusion, tackling the incidence of non-communicable illnesses and lessening the strain on healthcare systems need the promotion of healthy eating habits. It is imperative to take proactive actions to solve this issue since processed foods have a negative influence on public health and cannot be disregarded. We can avoid the emergence of several non-communicable illnesses and lessen the strain on healthcare systems by increasing knowledge of the harmful effects of processed foods and encouraging good eating habits. Additionally, encouraging healthy eating practices can benefit the environment by lowering the carbon footprint associated with the manufacture and delivery of processed foods.

Socioeconomic, sociocultural, biological, and business aspects all have an impact on people's food preferences, eating habits, and purchase decisions in Hong Kong. These variables have been discovered, and this integrated study has assessed how they impact Hongkongers' decisions to choose healthy diets. Recommendations have been given to the government and residents of Hong Kong to encourage healthy eating among various population groupings. To create a better, more sustainable future for public and future generations, it is crucial to address these concerns and urge people to adopt healthy eating habits.

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