Fast Food and its Effects among the Teenagers in the Municipal of Cachoeiro De Itapemirim-Espirito Santo, Brazil

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ABSTRACT

Fast food is a major part of present life, due to some factors such as the style of life, value and the huge commercial advertisements, it has several effects on teenage health. The basic purpose of this study was to identify the effects of fast food on the health of teenagers of the municipal of Cachoeiro de Itapemirim. The study was based on two theories namely, The Theory of Planned Behaviour proposed by Icek Ajzen in 1991and the Bandura 1969 Social Cognitive Theory. The study was purely quantitative. In this study, a correlational design and simple random sampling were employed. There were 48 responders in the sample size. A self-administered questionnaire was used for data collection. The questionnaire was pretested and validated before the final data collection. Extensive literature review was done, and a tool was developed reviewing similar literature, which reports the effects of fast food consumption. Statistical Packages for Social Sciences version 26 (SPSS version 26) were used for quantitative data analysis. The main effects of fast food on the health of teenagers are, obesity, depression, diabetes, heart disease, physical performance and reproductive health. Majority (85.42%) of the respondents have information about fast food, (12.50%) did not have any information about fast food and (2.08%) never responded. The chi-square result on the relationship between fast food and effects was very significant, χ^2 ([56], N = [48]) = [49.53], p = [.717]. Fast food was more likely to affect the teenagers. With the p =.717 > .05 the null hypothesis is not rejected. A P-Value >0.05 is not statistically significant. Use of fast food was found to be increasing among teenagers. Consumption of fast food at high level is increasing physical and mental health problems. This study emphasizes strong need to adopt healthy eating behaviours that are associated with lower mental distress, high body esteem and higher psychological well-being.

Keywords: Fast food, teenagers, Effects, Lifestyle, and Awareness.

INTRODUCTION

Teenagers' diet is inadequate, not meeting the dietary recommendations and guidelines. It is characterized by foods and beverages rich in fat and sugar such as corn and potato chips, finger foods, cookies, candies, soft drinks and artificial juice. On the other hand, there is a low intake of fruits, vegetables, whole grains, fiber and milk (Leal, G.V.S., et.al.2010). These dietary patterns are a matter of concern for their potential risk for obesity and chronic noncommunicable diseases such as cardiovascular diseases, diabetes and cancer (Matthews, V.L., Wien, M. and Sabaté, J. 2011, Dishchekenien, V.R.M., et. al 2011). The teenagers eating patterns are influenced by several factors such as individual food preferences, family meal patterns and parental role modeling. Neumark-Sztainer, D. et. Al. (2005) say, it has become clear that this population's eating habits are also determined by media messages and social norms.

For humans, to maintain a healthy and strong life depends on a diet that is well balanced. This is especially true for those in the growing age (Demirci, 2002). A 2001 survey of 4746 children and teenagers, 11 to 18 years old, showed that fast-food consumption was associated with higher intakes of cheeseburgers, French

fries, pizzas, and soft drinks, and lower intakes of fruits, vegetables, and milk (French et al., 2001). Fast foods have been defined by Bender and Bender (1995) as a "general term used for a limited menu of foods that lend themselves to production-line techniques; suppliers tend to specialize in products, such as hamburgers, pizzas, chicken, or sandwiches" (Davies & Smith, 2004)

Fast food term refers to foods which are easy to make and quick to consume, Michael Jacobson aptly coined the phrase fast food in 1972 as slang for foods of less or low nutritional value so called HFSS (High Fat, Sugar or Salt) (Mandoura N, Al-Raddadi R, Abdulrashid O, et al. 2017). Fast foods comprise anything that is quick, tasty, convenient and fashionable. They are energy dense foods with high sugar/fat/salt content and low nutrient value in terms of proteins, fibers, vitamins and mineral content e.g. chips, chocolate, ice cream, soft drinks. The terms fast foods and Junk Foods are often used interchangeably. Most of the fast foods are Junk foods as they are prepared and served fast, but not all of fast foods are junk food, especially when they are prepared with nutritious contents (Bhaskar R. 2012).

Fast food culture is an emerging trend among the younger generation. Their ready availability, taste, low cost, marketing strategies and peer pressure make them popular (Davis B, Carpenter C. 2009). Consumption of fast foods is associated with obesity, hypertension, dyslipidemia, impaired glucose tolerance, type 2 diabetes, coronary artery disease, dental caries and gastritis. Especially in young aged, fast foods are not only unhealthy but addictive and create a vicious circle making it hard to choose healthy food. Fast foods often contain colours that are inedible, carcinogenic and harmful to the body (Davis B, Carpenter C. 2009). The concerns with fast food consumption in developing countries also include poor hygiene during preparation, storage and handling leading to microbial contamination (Datar A, Nicosia N. 2012). Fast food consumption by teenagers of the municipal of Cachoeiro de Itapemirim exposed to stress and lack of time (Fister K. 2005) tend to make their own food choices based on cost and availability of fast food. They may lack the knowledge of healthy food choices that may affect eating habits and nutritional status negatively (Nakayama K, Nakayama M, Terawaki H, Murata Y, Sato T, Kohno M, et al. 2009). It has been assumed that the teenagers would practice healthy dietary habits compared to adolescents (Anderson JW, Patterson K 2009). Fast food consumption has drastically increased in brasil recently. Fast foods have certainly carved up the third World due to globalization; It is an integral part of life in the developed and also the developing world and coming with it is a massive increase in obesity and associated health problems. It became necessary to study and determine adverse effects of fast foods consumption and associated problems. The objective of this study was to asses the effects of fast food consumption among teenagers of the municipal of Cachoeiro de Itapemirim.

Background to the study

The urbanization process in developing countries has been observed in recent decades, with the move of rural populations to the cities. Notably, in Brazil, the same process can be seen, where there is an increase of the population living in urban centres and an increase in population density in cities. Cities have experienced improvements in conditions of water supply, sewage services and electricity. However, deficiencies in urban infrastructure, education, housing, transportation, health and safety are still prominent (Observatório das Metrópoles, 2017).

Despite the recession between 2014 and 2015 in Brazil, food-related franchising business accounted for 20 per cent of the total revenue of business in the franchise system, ranking second among the various segments that comprise this sector. Between 2014 and 2015, the food segment (franchising) grew by roughly 7 per cent in revenue. Business in the franchise system generated an increase of 90,000 jobs (in the same period), which indicates a growth of 8.5 per cent over 2014. Currently, Brazil has foreign franchise chains from 159 countries; the main countries of origin are: USA (40 per cent); Portugal (14 per cent); Argentina (9 per cent); Spain (6 per cent); England (5 per cent); Canada (4 per cent); Italy (4 per cent); France (3 per cent); Denmark (2 per cent); Mexico (2 per cent); and Uruguay (2 per cent). Of the total

number of foreign brands, 21 per cent refer to food, the highest percentage among all segments in this type of business (ABF, 2016). Among the nine foreign brands considered in this study, six of them originate from the USA and the other three come from Canada, Chile and Portugal (Global Powers of Retailing, 2014; Global Powers of Retailing, 2015).

Globally, teenagers, especially those in low- and middle-income countries, are experiencing a nutritional transition in the form of a dramatic shift in food-consumption patterns from their respective countries' traditional diet to a Westernized diet (Mandoura N, Al-Raddadi R, Abdulrashid O, et al. 2017). Failure to meet nutrient requirements during teanage age can result in growth retardation, impaired organ remodelling, and micronutrient deficiencies (Hruby A, Hu FB. 2015). Such unhealthy dietary habits in youth are thus associated with an increased risk of obesity (Mohiuddin AK. 2019), cardiovascular disease (Hossain MS, Siddiqee MH, Ferdous S, et al. 2019), type 2 diabetes (Bhuiyan MU, Zaman S, Ahmed T. 2013), and cancer (Alam MM, Hawlader MDH, Wahab A, Hossain MD, Nishat SA, et al. 2019) in later adulthood.

In South Asian countries, there is a clear rising trend of such fast food consumption (Odegaard AO, et al. 2012, Tabassum A, Rahman T. 2012). Despite established evidence of the negative impacts of fast foods on the human body, the consumption of fast foods is popular among youngsters. Such consumption may lead to a high prevalence of obesity, diabetes mellitus, hypertension, and coronary heart disease (Payab M, Kelishadi R, Qorbani M, Motlagh ME, Ranjbar SH, Ardalan G, et al. 2015).

Amy Reichelt says, "Fast food shapes teenagers' brains in ways that impair their ability to think, learn and remember. It can also make it harder to control impulsive behaviours, it may even up a teen's risk of depression and anxiety, she notes. Teenagers are more sensitive than any other age group to foods with a lot of processed fat and sugar". She continues to say; teenage brains are still developing. And that actually leads to three problems in one, says Reichelt. First, adolescent brains are still developing the ability to assess risks and control actions. Second, teen brains get more pleasure than adult brains do from rewarding behaviours such as eating fast food. Third, teenage brains can be more easily influenced by their environment. This can include any stress you're feeling, any isolation or any drugs you may be taking. It can also be influenced by diet. Together, these all can combine to makefast food both hard to resist and extra bad for teen health.

American teenagers receive 16.9 percent of their calories from fast food. Fast food is an undeniable part of American culture. In the United States "It's extremely difficult to eat in a healthy way at a fast-food restaurant. Despite some of their recent healthful offerings, the menus still tend to include foods high in fat, sugar, and calories, and low in fiber and nutrients." Pereira, M. et. Al. 2005 believes it's time to cut back on fast food intake and designate a kitchen time for you and your teen. Even if you start with once a week, that's one less meal eaten out of home, and that could save your teen some pounds.

With South Africa mirroring worldwide obesity and nutrition-related chronic disease trends (Vorster HH, Venter CS, Wissing MP, Margetts BM. 2005), it is important to assess changing dietary habits and eating practices (Bourne LT, Lambert EV, Steyn K. 2002, Kruger R, Kruger HS, Macintyre UE. 2006), with specific emphasis on fast food consumption. teenagers living in urban areas (townships, settlements, towns and cities) are increasingly exposed to the influences of the Western lifestyle, and therefore to foods that are relatively high in fat, carbohydrates and salt and low in fibre. Townships (historically disadvantaged areas in South Africa) such as Soweto, have a wide selection of food vendors, both commercial and informal (street vendors and tuck shops) that sell fast-food items, including vetkoek (fried fat cakes), fried chicken, deep-fried fish, fried chips and fried meats, including processed sausages.

In recent decades, in Brazil as in other countries, there have been relevant changes in the health and dietary patterns of populations (WHO; 2017). Given this scenario, the identification and monitoring of food consumption of individuals or groups have become essential tasks for the diagnosis of health status, planning and evaluation of national health and nutrition programs and policies (WHO; 2017). Being

overweight is a global public health problem and a key risk factor for the development of chronic, non-communicable diseases (Ng, M. et al.2014). Worldwide, approximately 20–25% of teenagers (individuals aged 10–19 years)4 are overweight (Ng, M. et al.2014). In Brazil, 23.7% of teenagers are overweight (Ministry of Health 2016), which is associated with poor eating habits such as high consumption of ultra-processed foods and low consumption of minimally processed and/or fresh foods (WHO/FAO, 2003). Ultra-processed foods are generally defined as those manufactured industrially through several stages of processing (WHO/FAO, 2003). Accordingly, such foods contain laboratory-synthesized industrial substances (e.g., emulsifiers, colorants, flavourings, flavour enhancers, and thickeners) and large amounts of calories, trans fats, sugars, sodium, and chemical additives (WHO/FAO, 2003).

Objective of the Study

To identify the relationship between fast food consumption and its effects on the teenagers of Cachoeiro de Itapemirim, Espirito Santo -Brasil.

EFFECTS OF FAST FOOD

Fast Food and Obesity

Overweight is a body weight which exceeds the normal body weight for a given body height. Severe overweight is also known as obesity and is classified as a disease by the World Health Organization (WHO). A study done in the USA from 1999 through 2018 the percentage of Americans who are deemed obese increased. from just over 30% to more than 42%, according to the Centres for Disease Control and Prevention. More than 4 in 10 Americans now fit the medical definition for having obesity, putting them at risk for serious health problems, including diabetes, heart disease and some types of cancer (Karen Weintraub, USA TODAY, July 26, 2022). Despite rising rates of overweight and obesity, the stigma of excess weight remains in virtually every aspect of society. Some people are fighting back, but it isn't easy to counter decades of stereotyping and falsely simple solutions. The study concluded that highly processed foods are fast and filling. They are designed to taste good and be hard to stop eating. They can sit for months on store shelves. And they are cheap. Hence the study concluded that ultra-processed food plays a significant role in the obesity epidemic.

A study in Germany researched about overweight and obesity prevalence by sex, age, and education groups. The study concluded that, the prevalence of overweight (including obesity) increases with age and the proportion of women and men affected by obesity also increases steadily over the life course and concludes that, obesity is significantly more common in the low education group compared to the high education group (Overweight and obesity among adults in Germany – Results from GEDA 2019/2020-EHIS).

A study in Australia concluded that, although overweight and obesity is mainly caused by an energy imbalance (where too much energy is taken in through food and drink, and not enough energy is expended through physical activity), many other factors contribute to the development of excess weight teenagers. These include rapid weight gain during infancy, poor sleep, having parents who are overweight or obese, and exposure to marketing of unhealthy food that is targeted at teenagers (Overweight and obesity among Australian children and adolescents AIHW).

By 2016, 21.56% of South African adolescents were either obese or overweight, similar to the 21% prevalence reported in 2018 among European adolescents. Girls in South Africa showed higher trends for obesity and overweight compared to boys, different from Europe where, higher trends were reported among boys. South African Adolescents from upper socioeconomic families showed greater trends in prevalence of overweight and obesity than adolescents from medium and lower socioeconomic families (Public Health 06 December, 2022).

Most of the fast food contains a large amount of sugar, fats and carbs and less minerals and vitamins. This means that people are taking in large amounts of unhealthy calories in the shape of fast food which leads to weight gain and ultimately obesity. In a Brazilian study, several products were identified as obesogenic: sweets and sugar, typical rich food dishes, pastries, oils, milk, cereals, cakes and sauces (Santos NH, Fiaccone RL, Barreto ML, Silva LA, Silva Rde C. 2014). Obesity is linked to several long-term health conditions, premature death and illness including diabetes, heart disease, stroke, gall bladder disease, fatty liver, arthritis and joint disorders and some cancers (Hruby A, Hu FB. (2015). Processed and fast foods contain high amounts of saturated fats. Fast foods reduce the quality of diet and provide unhealthy choices especially among teenagers raising their risk of obesity.

Fast Food and Depression

Apart from the effects on the physical health, fast food consumption could also affect psychological well-being. This warrants a different perspective on understanding the effects of fast food (Carabotti, 2015). Animal study found that rats exhibit mania-like behaviour after prolonged consumption of trans fat (Trevizol, 2015). Further, in humans, consumption of fast food was found to be associated with a higher risk of depression (Sánchez-Villegas, 2012). Therefore, adolescents with overweight and obese problems who frequently consumed fast foods could also be exposed to the worsening of their psychological well-being. Obesity can result in lowered self-esteem, and perhaps depression. Some children who eat junk food are at risk of developing depression even without obesity. Depression in turn affects growth and development parameters, academic performance, and social relationships. It also results in a higher risk of suicide.

A research team in Hangzhou, China, found that frequent consumption of fried foods, especially fried potatoes, was linked with a 12% higher risk of anxiety and 7% higher risk of depression than in people who didn't eat fried foods (CNN Health, Mon April 24, 2023). The researcher suggested that acrylamide, a chemical formed when frying, especially in fried potatoes, is to blame for the higher risk of anxiety and depression. There is no need to panic about the adverse effects of fried food but maintaining a healthy lifestyle and reducing consumption of fried foods may be helpful for mental health in additional to overall health (CNN Health, Mon April 24, 2023).

Highly processed foods, also called ultra-processed foods (UPFs), are widely recognized as predisposing to various medical conditions due to their adverse impact on metabolic pathways. However, less is known about their effect on mental health. A recent research paper explored this aspect, showing a positive association in younger Italians between UPF intake and depressive symptoms (Dr. Liji Thomas).

Findings on the relationship between fast food consumption and depression have been mixed, suggesting more research is needed in this area. One of these studies found a positive association between fast food consumption and depression in male and female college students in the United Kingdom (El Ansari W, Adetunji H, Oskrochi R. 2014). In another, fast food consumption was positively associated with depression only among Mexican female college students, but not their male counterparts (Lazarevich J, Irigoyen Camacho ME, Velazquez-Alva MC, Flores NL, Najera Medina O, Zepeda MA. 2018). In the third, there was no significant relationship found between fast food consumption and depression in a sample of Lebanese college students (Jaalouk D, Matar Boumosleh J, Helou L, Abou JM. 2019). Moreover, findings on the relationship between soda consumption and depression in young adulthood are similarly mixed (El Ansari W, Adetunji H, Oskrochi R. 2014). In a sample of Chinese college students, those students who drank soda more than seven times weekly were more depressed than students who infrequently drank soda (Zhang X, Huang X, Xiao Y, Jing D, Huang Y, Chen L, et al. 2019). However, in another sample of college students in the United Kingdom, soda consumption was not significantly associated with depression (El Ansari W, Adetunji H, Oskrochi R. 2014). While a study in Brasil found that, regular sweets consumption and replacement of meals for snacks were positively associated with depression (Food consumption and

depression among Brazilian adults- CSP).

Fast Food and Diabetes

Researchers from NYU Grossman School of Medicine published online (October 29 in JAMA Network Open) suggests that living in neighbourhoods with higher availability of fast-food outlets across all regions of the United States is associated with higher subsequent risk of developing type 2 diabetes (T2D). Fast food restaurants continuously take over many high streets in the Western world and are only growing in demand due to their convenience, low costs, and good taste. However, it is no secret that the consumption of burgers and fries is bad for our health. Many fast-food chains use cheap ingredients that are high in fat and added sugar, making the delectable meals great for our taste buds but poor for our long-term health. An insightful study conducted in the USA shared the problematic link between fast-food restaurants and Type 2 diabetes (T2D). The results stress the importance of taking action to address the burden of T2D on individuals and considering restricting the number of fast-food restaurants available while increasing the number of supermarkets selling fresh produce.

In South Asia, a research shows living in proximity to at least one fast food outlet is associated with a 16% increase in the chance of being diagnosed with diabetes (Science Daily, April 26, 2022).

A study done in the Netherlands concluded that, Fast-food outlet exposures were positively associated with diabetes prevalence. The result confirms the evidence that the fast-food outlet environment is a diabetes risk factor (https://doi.org/10.1016/S2542-5196(21)00298-9).

Fast Food and Heart Diseases

Areas with a higher number of fast food restaurants have more heart attacks (Cardiac Society of Australia and New Zealand- CSANZ 2019). Ischaemic heart disease, including heart attack, is one of the leading causes of death worldwide, it is known that eating fast foods is linked with a higher likelihood of fatal and nonfatal heart attacks. Despite this, there is rapid growth in the purchase and availability of fast food. This highlights the need to explore the role of food availability in the probability of having a heart attack (Cardiac Society of Australia and New Zealand- CSANZ 2019).

Living near fast food restaurants could spell trouble for heart health, based on a Dutch study that found that teenagers living within a half-mile of fast food outlets were more likely to develop heart disease than those living further away. Fast food is notorious for being unhealthy, largely due to the high amounts of fat, salt and calories contained in the processed foods. Over time, consumption of these foods can contribute to weight gain, high blood pressure and high cholesterol. These factors are known to increase risk for heart disease – the leading cause of death worldwide (CardioSmart, 2018).

Eating foods such as red meat and sugary treats may trigger inflammation, raising your risk of cardiovascular disease. These new findings help explain why certain foods we consider unhealthy may be contributing to plaque buildup inside arteries. Inflammation is marked by the release of molecules called cytokines into the bloodstream. These attract immune cells to artery walls, contributing to the development of plaque causing heart disease (Harvard Health Publishing, March 1, 2021).

A significant association was found between fast food consumption, blood preasure levels, and anthropometric indices in another Iranian study among teenagers (Payab M, Kelishadi R, Qorbani M, Motlagh ME, Ranjbar SH, et al 2015). Body size has a major impact on the association between intake of the modern dietary pattern and hypertension. Alsabieh et.al, 2019 demonstrates that increased systolic blood preasure significantly correlated with an increase in body mass index. Both Kar et.al and Bahadoran et.al, 2015 supports association between increased body mass index and fast food, Shimanda et.al, 2019

concluded that reducing the consumption of modern fast foods is important to prevent hypertension in Thailand. Higher consumption of fast foods and higher exposure to multiple sources of accessible, cheap, energy-dense fast foods were also accompanied with a 56-162% increased risk of coronary heart disease mortality (Bahadoran Z, Mirmiran P, Azizi F. 2016).

Cardiovascular disease (CVD) is the main cause of general and premature death worldwide. In 2019, data from the Global Burden of Disease indicated that CVD was responsible for the deaths of 18.6 million people, of which 85.1% were attributed to ischemic heart disease and cerebrovascular diseases. This study found an increase in the risk of cardiovascular disease, stroke, and ischemic heart disease mortality, especially in the municipalities where there was a greater offer of ultra-processed foods.

Fast Food and Physical Performance

A Newcastle-based study among teenagers show that dietary pattern high in red meats, potato or butter may adversely affect muscle strength and physical performance in later life (Granic A, Jagger C, Davies K, et al. 2016). The fat and sugar levels in fast foods stress the metabolism, causing it to work less effectively. Particularly daily consumption of fast food may be associated with poorer mental and physical health (Zahra J, Ford T, Jodrell D. (2014). Abstaining from fast foods is one way to keep cholesterol levels low and prevent clogged arteries, which can reverse the symptoms of heart disease and improve athletic performance. Excess consumption of fast food can affect the physical as well as mental performance of children. Addiction of fast-food in early age may cause serious illness in later age. The harmful effect of fast-food are overweight, low physical stamina and other health problems among adolescents (Lamba A, Garg V. 2017). Also, Stokes et.al, 2018 suggested fast food alternatives to young athletes. Muscle strength, muscle endurance, and flexibility decreases with an increase in junk food consumption.

Fast Food and Reproductive Health

Over-consumption of cheese, yogurt, modified grains (bread, pasta, crackers, cereals) may jeopardize testosterone, male sex hormone that plays a major role in fertility and sex drive, according to Dr. Michael Hirt, founder of the Center for Integrative Medicine in California (Gordon L. 2018). In addition, diets that are low in whole-grain foods, legumes, vegetables and fruits, and high in red meat, full-fat dairy products, and sugary foods and beverages are all associated with an increased risk of erectile dysfunction (Yafi FA, Jenkins L, Albersen M, et al. 2016). An of?cial publication of the Federation of Obstetrics and Gynecological Societies of India says that popularity of fast food in adolescence are responsible for the increasing polycystic ovarian syndrome in adolescent girls and is challenge for gynecologists treating them (Rathod AD, Chavan RP, Pajai SP, Bhagat V, Thool P. 2016).

Women who eat a lot of fast food may take longer to become pregnant and be more likely to experience infertility than their counterparts who rarely if ever eat these types of meals. Compared to women who generally avoided fast food, women who indulged four or more times a week before they conceived took almost a month longer to become pregnant, the study of 5,598 first-time mothers in Australia, New Zealand and the UK found. While women who rarely or never ate fast food had an 8 percent risk of infertility, the risk was 16 percent among women who ate fast food at least four times weekly (bit.ly/2Ic3Y6R Human Reproduction, online May 4, 2018).

Fast food intake needs to be strictly controlled in teenagers as it does no good and may do much harm. The antidote? Surprisingly, a simple increase in fruit intake can improve the mood and reduce the severity of atopic diseases. Stopping the marketing of fast foods directed at teenagers with attractive characters and gifts may be one way to help children eat better. Another method is to make healthy food more easily available at affordable prices and in a more appealing

METHODOLOGY

The study was purely a quantitative. A correlational research design was used in this study. Fast food and impacts are two factors that can be related to one another through correlational study. A self-administered questionnaire was used for data collection. The questionnaire was pretested and validated before the final data collection. Extensive literature review was done, and a tool was developed reviewing similar literature, which reports the effects of fast food consumption. A total of 48 teenagers responded and returned the questionnaires out of the intended 50 teenagers. The quantitative data was collected and analysed using Statistical Package of Social Sciences (SPSS version 26).

FINDINGS.

Demographic Information of Respondents

Although it was not the purpose of the study, this set of data was intended to describe demographic variables of the sample and to assess for any influence on the research findings. The characteristics of the respondents of this study consist of gender, age, educational level and family income.

Gender of the participants.

Gender can be defined as either the male or female division of species; the study wants to know the ratio between males and female in the study area in relation to their contribution to the study. It was assumed that the sex of respondents being male, or female could influence the consumption of the fast food hence an impact on the effects.

Table 2. Gender Demographic

gender		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	male	22	45.8	45.8	45.8
	female	26	54.2	54.2	100.0
	Total	48	100.0	100.0	

The analysis shows that twenty-two respondents (45.8%) were male and twenty-six respondents (54.2%) were female. This indicates that there were more female teenagers who participated in the study as compared to men.

Age of the participants.

Age defined as period of human life measured by years from birth usually marked by a certain stage or degree of mental or physical development. Age is one of the most important characteristics in understanding respondent's views about the particular problem. Age also indicates level of maturity of individuals in your research response. In this study, the respondents' age was categorised into three age groups 13 years-15 years, 16 years -17 years, and 18years -19years.
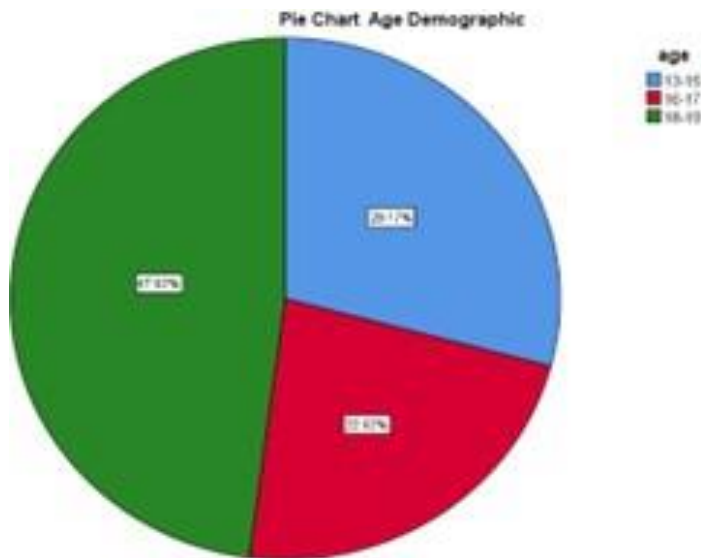
Figure 2. Age Demographic

The results show that the majority of the respondents (47.92%) had their age ranging between 18 years and 19 years. The respondents age also followed by those ranging between 13 years -15 years who constituted 29.17% of the total respondents. The lowest represented age of the respondents was 16 years – 17 years representing 22.92% of the respondents.

Education level of the participants.

Education is the source of knowledge, skills, discipline, motivation and self-confidence (Cooper, Gimenogascon and Woo, 1994). Therefore, it is one of the most important characteristics that might affect the person's attitudes and the way of looking and understanding any particular social phenomena. In a way, the response of an individual is likely to be determined by his or her education status thus it becomes vital to know the education level of the respondents. Educational levels of the respondents are presented in Figure 3.
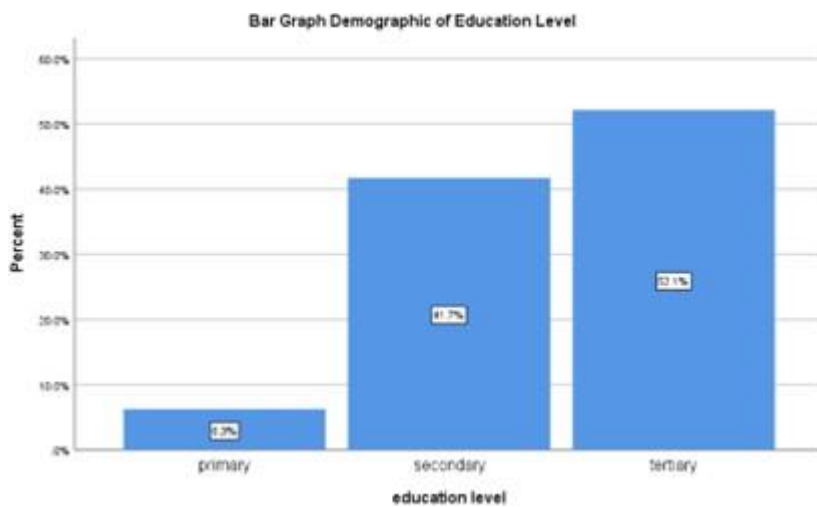

Figure 3. Educational level Demographic

The results show that 6.3% of respondents were in primary level. 41.7% of respondents were attending secondary school. 52.1% were in tertiary level. The findings also show that majority of respondents which is

52.1% were in tertiary level of education which is college or university education. It is believed that teenagers at tertiary level of education such as college or university education are capable to decide on what they want to eat.

Family income of the participants

Food is a human need that encompasses a multiplicity of aspects that influence quality of life. Diet plays an important role in growth and development of teenagers. However, dietary intakes of teenagers living in either rural or urban areas can be influenced by household income. Many studies have found an association between dietary patterns and socioeconomic class. However, their results indicate that the relationship between socioeconomic factors and dietary patterns is controversial and varies among populations, suggesting the pertinence of investigating these relationships in other contexts and different population groups (Sichieri R, Castro, JFG, Moura, AS. 2003). Healthy diets with whole grains, lean meats, fish, low fat dairy products and fresh vegetables and fruit are more likely to be consumed by groups of higher socioeconomic status. Diets rich in these types of foods are associated with a lower risk of compromising heart health or a healthy body weight.

Lower income families across different countries tend to select diets based on price; the foods they choose are cheaper, denser in energy and contain few vegetables and fruit. These choices may lead to inadequate intakes of key micronutrients and poverty driven hidden hunger, as well as the overconsumption of calories and a rise in obesity rates. (Black RE, Allen LH, Bhutta ZA, et al., 2008).
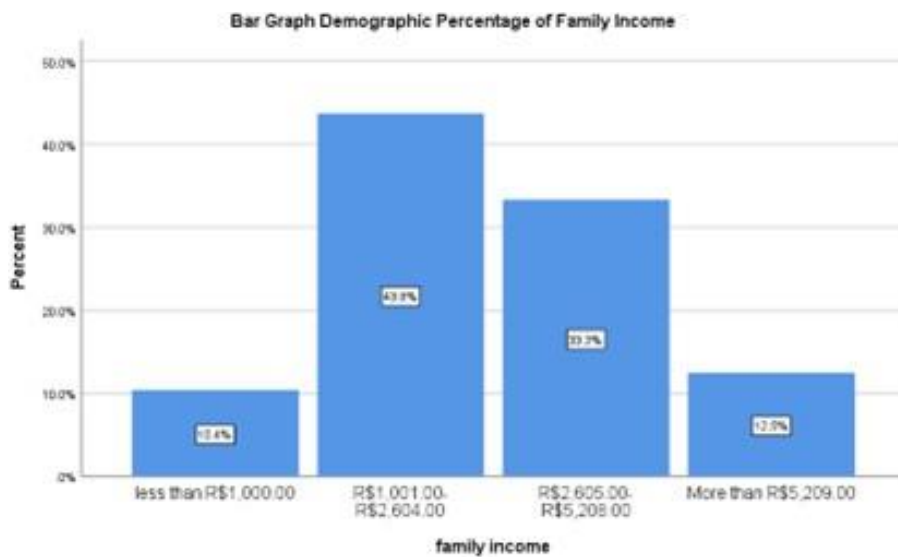

Figure 4. Family Income Demographic

The result shows that those families earning less than R$ 1,000.00 represent 10.4%, families earning R$ 1,001.00- R$ 2,604.00 represent 43.8%, families earning R$ 2,605.00- R$ 5,208.00 represent 33.3% and families earning more than R$ 5,209.00 represent 12.5%. This means that the majority of the families earned R$ 1,001.00- R$ 2,604.00 while the minority earned less than R$ 1,000.00.

Relation of Fast food and Obesity

The study sort to find out the relationship between fast food consumption and its effects among the teenagers. A Pearson correlation coefficient and interpretation in Statistical Package for Social Sciences was done between fast food and obesity as presented in the table below.

Table 3. Relation of Fast food and Obesity

Correlations		fast food	obesity
fastfood	Pearson Correlation	1	.444[**]
	Sig. (2-tailed)		.002
	N	48	48
obesity	Pearson Correlation	.444[**]	1
	Sig. (2-tailed)	.002	
	N	48	48
**. Correlation is significant at the 0.01 level (2-tailed).			

A Pearson correlation coefficient was performed to evaluate the relationship between fast food and obesity. There was a significant moderate positive relationship between fast food and obesity, (r=.44, n=48, p = .002)

This relationship confirms the Brazilian study, several products were identified as obesogenic: sweets and sugar, typical rich food dishes, pastries, oils, milk, cereals, cakes and sauces (Santos NH, Fiaccone RL, Barreto ML, Silva LA, Silva Rde C. 2014).

Relation of Fast food and Depression

The study sort to find out the relationship between fast food consumption and its effects among the teenagers. A chi-square in Statistical Package for Social Sciences was done between fast food and depression as presented in the table below.

Table 4. Relation of Fast food and Depression

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	50.806[a]	56	.671
Likelihood Ratio	49.807	56	.707
Linear-by-Linear Association	4.197	1	.040
N of Valid Cases	48		
a. 75 cells (100.0%) have expected count less than 5. The minimum expected count is .06.			

A chi-square test of independence was performed to evaluate the relationship between fast food and depression. The relationship between these variables was very significant, χ^2 ([56], N = [48]) = [50.81], p = [.671]. Fast food was more likely to cause depression. With the p =.671 > .05 the null hypothesis is not rejected. A P-Value >0.05 is not statistically significant. It denotes strong evidence for the null hypothesis being true. Higher values indicate a stronger correlation between the two variables.

This is true because a research team in Hangzhou, China, found that frequent consumption of fried foods, especially fried potatoes, was linked with a 12% higher risk of anxiety and 7% higher risk of depression than in people who didn't eat fried foods (CNN Health, Mon April 24, 2023). While a study in Brasil found that, regular sweets consumption and replacement of meals for snacks were positively associated with depression (Food consumption and depression among Brazilian adults- CSP).

Relation of Fast food and Diabetes

The study sort to find out the relationship between fast food consumption and its effects among the teenagers. A Pearson correlation coefficient in Statistical Package for Social Sciences was done between fast food and diabetes as presented in the table below.

Table 5. Relation of Fast food and Diabetes

Correlations		fast food	diabetes
fast food	Pearson Correlation	1	.161
	Sig. (2-tailed)		.273
	N	48	48
diabetes	Pearson Correlation	.161	1
	Sig. (2-tailed)	.273	
	N	48	48

A Pearson correlation coefficient was performed to evaluate the relationship between fast food and diabetes. There was a significant small positive relationship between fast food and diabetes, (r=.16, n=48, p = .273)

Relation of Fast food and Heart diseases

The study sort to find out the relationship between fast food consumption and its effects among the teenagers. A Chi-square in Statistical Package for Social Sciences was done between fast food and heart disease as presented in the table below.

Table 6. Relation of Fast food and Heart diseases

Chi-Square Tests	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	61.734[a]	56	.279
Likelihood Ratio	57.363	56	.424
Linear-by-Linear Association	.803	1	.370
N of Valid Cases	48		
a. 75 cells (100.0%) have expected count less than 5. The minimum expected count is .04.			

A chi-square test of independence was performed to evaluate the relationship between fast food and heart disease. The relationship between these variables was very significant, χ^2 ([56], N = [48]) = [61.73], p = [.279]. Fast food was more likely to cause heart disease. With the p =.279 > .05 the null hypothesis is not rejected. A P-Value >0.05 is not statistically significant. It denotes strong evidence for the null hypothesis being true. Higher values indicate a stronger correlation between the two variables. Thus, we retain the null hypothesis and reject the alternative hypothesis. We cannot accept null hypothesis; we can only reject or not reject it.

This correlation is what Harvard Health talked about as eating foods such as red meat and sugary treats may trigger inflammation, raising your risk of cardiovascular disease. These new findings help explain why certain foods we consider unhealthy may be contributing to plaque buildup inside arteries. Inflammation is

marked by the release of molecules called cytokines into the bloodstream. These attract immune cells to artery walls, contributing to the development of plaque causing heart disease (Harvard Health Publishing, March 1, 2021).

Cardiovascular disease (CVD) is the main cause of general and premature death worldwide. In 2019, data from the Global Burden of Disease indicated that CVD was responsible for the deaths of 18.6 million people, of which 85.1% were attributed to ischemic heart disease and cerebrovascular diseases. This study found an increase in the risk of cardiovascular disease, stroke, and ischemic heart disease mortality, especially in the municipalities where there was a greater offer of ultra-processed foods which is in line with this study too.

Relation of Fast food and Physical Performance

The study sort to find out the relationship between fast food consumption and its effects among the teenagers. A Pearson correlation coefficient in Statistical Package for Social Sciences was done between fast food and physical performance as presented in the table below.

Table 7. Relation of Fast food and Physical Performance

Correlations			
		Fast food	physical performance
fastfood	Pearson Correlation	1	.318[*]
	Sig. (2-tailed)		.027
	N	48	48
physical performance	Pearson Correlation	.318[*]	1
	Sig. (2-tailed)	.027	
	N	48	48
*. Correlation is significant at the 0.05 level (2-tailed).			

A Pearson correlation coefficient was performed to evaluate the relationship between fast food and physical performance. There was a significant small positive relationship between fast food and physical performance, (r=.32, n=48, p = .027)

This relation explains what Stokes et.al, 2018 suggested fast food alternatives to young athletes. Muscle strength, muscle endurance, and flexibility decreases with an increase in fast food consumption. This is because of the high calorie content of the fast food making the body to have low stamina.

Relation of Fast food and Reproductive Health

The study sort to find out the relationship between fast food consumption and its effects among the teenagers. A Chi-square in Statistical Package for Social Sciences was done between fast food and reproductive health as presented in the table below.

Table 8. Relation of Fast food and Reproductive Health

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	78.155[a]	56	.027
Likelihood Ratio	68.139	56	.128

Linear-by-Linear Association	4.842	1	.028
N of Valid Cases	48		
a. 75 cells (100.0%) have expected count less than 5. The minimum expected count is .06.			

A chi-square test of independence was performed to evaluate the relationship between fast food and reproductive health. The relationship between these variables was very significant, χ^2 ([56], N = [48]) = [76.15], p = [.027]. Fast food was slightly to affect reproductive health. With the p =.027 < .05 the null hypothesis is rejected A P-Value < or = 0.05 is considered statistically significant. It denotes strong evidence against the null hypothesis, since there is below 5% probability of the null being correct. So, we reject the null hypothesis and accept the alternative hypothesis.

With this strong relation it confirms, over-consumption of cheese, yogurt, modified grains (bread, pasta, crackers, cereals) may jeopardize testosterone, male sex hormone that plays a major role in fertility and sex drive, according to Dr. Michael Hirt, founder of the Center for Integrative Medicine in California (Gordon L. 2018). This is in line with diets that are low in whole-grain foods, legumes, vegetables and fruits, and high in red meat, full-fat dairy products, and sugary foods and beverages are all associated with an increased risk of erectile dysfunction (Yafi FA, Jenkins L, Albersen M, et al. 2016). Women too are affected equally with the consumption of fast food, women who eat a lot of fast food may take longer to become pregnant and be more likely to experience infertility than their counterparts who rarely if ever eat these types of meals.

A Chi square test was performed to test the relationship. In this hypothesis Chi-square test was chosen because the data is a non- parametric data, specifically both the independent and dependent variables are ordinal variables, representing ranks among the categories. Chi square significance test is usually used to examine the significance of the difference between a set of observed frequency and expected frequency.

Table 9. Fast food consumption and its effects

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	49.525[a]	56	.717
Likelihood Ratio	48.440	56	.753
Linear-by-Linear Association	3.087	1	.079
N of Valid Cases	48		
a. 75 cells (100.0%) have expected count less than 5. The minimum expected count is .02.			

A chi-square test of independence was performed to evaluate the relationship between fast food and effects. The relationship between these variables was very significant, χ^2 ([56], N = [48]) = [49.53], p = [.717]. Fast food was more likely to effects on the teenagers. With the p =.717 > .05 the null hypothesis is not rejected. A P-Value >0.05 is not statistically significant. It denotes strong evidence for the null hypothesis being true. Higher values indicate a stronger correlation between the two variables. Thus, we retain the null hypothesis and reject the alternative hypothesis. The relationship is visually illustrated with a bar graph in Figure 5.
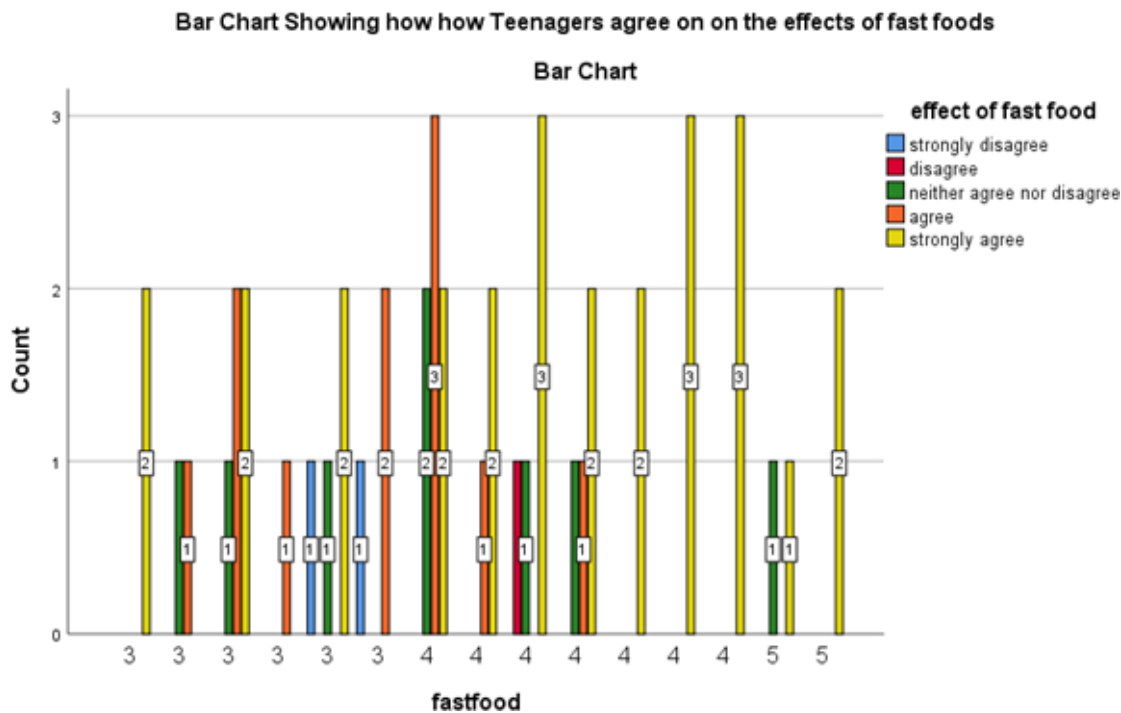
Figure 5. Fast food consumption and its effects

The analyses above suggest that fast food does have effects on the teenagers' health. The results from the data do support the hypothesis. From the study we can conclude that fast food has a relation with the effects.

DISCUSSION

In this study done in Cachoeiro de Itapemirim, fast food consumption was reported by all participants. The findings revealed that the proportion of fast food consumption in females (67.0%) was higher than males, which was similar to the result by (SD & Neupane, 2000). which said (53.5%) who consumed fast food were girls. That may be because girls are more likely to be influenced by marketing campaigns that involved giveaways or competitions than males. Also, in this study, we corroborated the observation that older teenagers tend to eat fast food more frequently than younger teenagers. This was similar to what was reported by (Fanning et al., 2002) which said the probability of purchasing fast food increases until about 30 years of age.

Knowledge can influence a person's behaviour, including knowledge about nutrition that can affect food consumption behaviour. Adolescent knowledge relates to the existence of information facilities, such as libraries in schools, computer laboratories, and multimedia rooms to find the latest information. Lack of nutritional knowledge and consuming non-nutritive foods can cause problems with low levels of nutrients in the body. The majority of teenagers get support from their peers to eat fast food 4-27 times in one month. In this study, peer invitation was one of the factors that influenced teenagers to choose fast food or fast food compared to other foods.

Fast food restaurants are usually a gathering place with family or friends. A relaxed and comfortable place to eat, as well as an attractive layout, coupled with free wifi, are the main attraction for consumers to eat at fast-food restaurants. Fast service and practical presentation also influence people to consume fast food. For teenagers, consuming fast food is an option because of the limited time they have. One of the reasons you

often eat fast food is because it tastes good (Pratiwi, 2018). Teenagers who are accustomed to consuming fast food assume that fast food is food that has a good taste, is easy to obtain, and can arouse appetite. Fast food are generally liked by the public, including teenagers because it has a good taste. The factor that causes fast food to have a good taste is the high content of oil, salt, and sugar. Fast food restaurants, in general, are competing to make new variations of food with good taste so that it suits people's tastes.

Income in a group that has increased will also affect lifestyle changes, especially in the diet. People's eating patterns are changing in an unhealthy direction, such as eating fast food. The income of parents will also affect the pocket money received by teenagers. The availability of pocket money received by teenagers will affect the pattern of fast food consumption. The bigger the pocket money that teenagers have, the more and more teenagers consume fast food. Low prices and large portions offered by fast-food restaurants also affect the habit of consuming fast food. In addition, the number of discounts offers by fast-food restaurants also increases people's desire to buy these foods. Discounts and savings packages offered make consumers, especially teenagers, increasingly interested in coming and consuming fast food.

The brand of a fast-food restaurant can influence someone to consume this fast food. Teenagers tend to eat food that has a well-known brand or brand as self-expression in association and becomes a prestigious event. The thing that is becoming a trend for teenagers today is to take pictures at restaurants with the brand to show their friends through social media. This shows that they have visited and eaten at restaurants with that brand.

Fast food is an integral part of a modern urban lifestyle. Ease of access and ready availability of fast foods is very common in developed countries such as in the United States. At the same time, the invasion of fast food culture is gradually engulfing the urban lifestyle in developing countries. This study attempted to explore the effects of fast food consumption.

In this study, the relationship between fast food and its effects on the teenagers was tested using a hypothesis. It is interesting to note that the trend of fast food eating culture has taken on a global face. According to a recent comprehensive review article by Bezerra et al. (2012), it can be anticipated that individuals in developing and underdeveloped countries may increasingly be exposed to the fast food culture with their social and economic advancements in near future (Bezerra et al. 2012).

The hypothesis that were tested in this study revealed statistically significant results. There is a relationship between fast food and its effects based on the findings from the statistical analysis of the data. In the hypothesis, the Chi-square test produced significant association between fast food and its effects. the finding was statistically significant (Pearson Chi-square = 49.53; Asymp sig = .717). So, the research null hypothesis that "There is no significant relationship between fast food consumption and its effects on the teenagers of Cachoeiro de Itapemirim, Espirito Santo -Brasil" was accepted.

Other findings from this study revealed that the majority of the sample strongly agreed with a statement that fast food was not always good for their health, yet the tendency to look at nutritional information before purchasing fast foods is less among the samples. It may signify that, though the respondents were aware of the negative health impacts of fast foods, they really did not place much importance on nutritional information as a deciding factor of fast food consumption. These findings together may partly explain the weak association of nutritional information and fast food consumption.

RECOMMENDATIONS/IMPLICATION OF THE STUDY

Use of fast food was found to be increasing among teenagers. Consumption of fast food at high level is increasing physical and mental health problems. This study emphasizes strong need to adopt healthy eating behaviours that are associated with lower mental distress, high body esteem and higher psychological well-

being. So, the present study will not only be helpful for clinicians to treat health problems caused by fast food but to provide awareness to young people regarding harmful consequences of fast food.

CONCLUSION

Consumption of fast foods has become a hallmark of modern urban and semi urban life style, both in Western countries as well as in the developing world. There may be a universal perception that such consumption is undesirable, as such foods contain high calorie, sodium, saturated fat and sugar. Even considering all of these factors, there is an undeniably increasing trend in consumption of fast foods. This study attempted to understand the psychological motive that leads individuals to choose fast foods, despite information on several negative factors associated with the consumption of these kinds of foods. In this context, more research focusing on psychological analysis of eating behaviors examining the increasing trend of fast food consumption may reveal new dimensions on this area. Also, it is the responsibility of the fast food industry to make nutritional information of the foods they are selling easily available to the consumers. On the other hand, individuals who frequently consume fast food cannot abandon their individual responsibility to reduce fast food consumption by making healthier dietary choices both at fast food restaurants and at home. Individual consumers need to be more aware and educated about their individual dietary needs and devise their dietary strategies for food choice according to their health. In this context, the supportive role of families and governments in making individuals, especially the younger generation, more educated about health and nutrition can make a real difference in the improvement of community health worldwide.

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