



Cross-Cultural Examination of Diet and Food Preparation and their Impact on Health

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ABSTRACT

Over the five years to 2022, IBIS world estimates that the obesity rate among adults aged 18 and older has increased an annualized 1.8% to 33 people per 100 individuals. Although this chronic disease has some correlation to genetics and family history, it can generally be prevented with changes in diet, lifestyle, or other environmental factors. Thus, advances in research continue to explore prevention and treatment strategies. However, emerging research shows that certain cultures have overall higher rates than others, perhaps due to the differences in diets. Similar to studies done in the past to identify factors related to obesity rates, I would like to study and compare the standard American diet to the typical Indian diet. Disease, specifically obesity, rates are far lower in India than America. Therefore, the work done in this study will give the community of chefs and consumers a sense of how to better cook and prepare food in healthier ways. It will also provide insight to the medical community and nutritionists about the link between diet, health, and culture.

Keywords: Diet; Nutrition; Environmental factors; Obesity; Medical community

INTRODUCTION

Over the five years to 2022, IBIS world estimates that the obesity rate among adults aged 18 and older has increased an annualized 1.8% to 33 people per 100 individuals [1]. Although this chronic disease has some correlation to genetics and family history, it can generally be prevented with changes in diet, lifestyle, or other environmental factors. Thus, advances in research continue to explore prevention and treatment strategies. However, emerging research shows that certain cultures have overall higher rates than others, perhaps due to the differences in diets. Similar to studies done in the past to identify factors related to obesity rates, I would like to study and compare the Standard American Diet (SAD) to the typical Indian diet. Disease, specifically obesity, rates are far lower in India than America. As of 2016, India had an obesity rate of 3.9%, whereas America had a much higher rate of 36.2% [2]. Specifically, my research question is: How can food better be cooked and presented in the Standard American diet using lessons from the typical Indian diet? Therefore, the work done in this study will give the community

of chefs and consumers a sense of how to better cook and prepare food in healthier ways. It will also provide insight to the medical community and nutritionists about the link between diet and health.

LITERATURE REVIEW

In this context, the Standard American Diet (SAD) refers to what's most commonly consumed in a western diet, whereas the Typical Indian Diet (TID) refers to common foods and drinks consumed in and around India [3].

Obesity is a disorder involving excessive body fat that increases the risk of deadly health problems, including diabetes, heart disease, and some cancers [4]. It often results from taking in more calories than are burned by exercise and normal daily activities. A chronic disease treatment model involving both lifestyle interventions and, when appropriate, additional medical therapies delivered by an interdisciplinary team including physicians, dietitians, exercise specialists, and behavior therapists offers the best chance for elective obesity treatment [5]. However,

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lifestyle factors, such as physical activity and eating behaviors can be monitored by people to prevent obesity in the first place.

America is experiencing an alarming increasing rate in the prevalence of obesity. The resulting morbidity, economic costs, reduced quality of life, and risk for complications make preventive strategies imperative. Other nations, like India, have much lower disease rates. Previous studies have investigated the correlation, if any, between certain types of diets and the prevalence of obesity in India [6]. It has been discovered that a healthier diet does in fact lead to a lower risk of obesity. Therefore, America should implement some new strategies that could help prevent obesity.

Previous studies have focused on individual and government-level intervention to combat this epidemic. Recently, there has been emerging research on the potential that school policies can have in preventing obesity among youth [7]. Restricting unhealthy food and beverage availability, as well as educating students about the importance of maintaining a healthy diet can have a great positive impact on preventing obesity. Future policy evaluations should measure the long-term effectiveness of a range of school food policies in addressing dietary intake as well as overweight and obesity in schools [8].

When it comes to diet, there is not a single nutrient that can be cut out to prevent obesity. Rather, it is a combination of many changes in eating behavior that can reduce one's chances of getting the disease. These can include eating more plant-based foods since red meats contain large amounts of saturated fats. Additionally, drinking water is far healthier than sugar-sweetened drinks. Regular consumption of fast food with large portion sizes and high energy density should be avoided [9]. As a whole, evidence has proven that the modification of fat intake can decrease the risk of obesity.

Findings from an accumulating number of studies have also shown evidence that most vegetarian diets are not only nutritionally adequate but also associated with lower risk of certain chronic diseases, when compared with the effects of a more typical western diet. Since a far greater population of India is vegetarian than America, India has an overall lower obesity rate. This protective effect may be explained by reduced consumption of animal fat and increased consumption of fruit; vegetables; foods with a low glycemic index, such as beans, legumes, nuts, and cereals including whole grains; as well as foods that reduce oxidative stress and chronic inflammation [10]. Clearly, there are many benefits, related to both general health and disease prevention, in increasing the vegetarian portion of one's diet.

Eating healthier foods is not only good for health, but also gives people more energy to be physically active. Fats contribute the most energy to the diet on a volume intake basis: they are twice as energy-dense as carbohydrates or proteins, and fats store energy at a lower energy cost than carbohydrates or proteins. Bad fats raise your total cholesterol and blood pressure, whereas healthy fats help lower your Bad Cholesterol (LDL) and boost your good cholesterol (HDL), lowering your risk for all types of diseases, including heart disease and obesity [11]. As a whole, it is important to focus on consuming the right fats for energy.

Organic to investigate the Standard American Diet vs. the Typical Indian Diet, I began by researching obesity in general to learn about what it is and what side effects it causes. I especially examined the relationship between diet and health, first by reading about the Standard American Diet, and then comparing it to other diets with better health statistics. This provided insight on better cooking and preparation strategies that could be implemented to reduce the abnormally high rate of obesity in SAD. As a member of a household that practices the culinary traditions of the Typical Indian Diet, I also used ethnographic research to leverage my "insider" access to cultural aspects of food preparation that are not so ciently discussed in academic literature. I had considered the use of surveys and focus groups, but ultimately decided that what was needed to address my research question was a more intimate and grounded focus on understanding cultural aspects that would be best revealed by auto-ethnography.

Also, the choice of method was in ruined by the study's limitations with time, resources, and the capacity to undergo a full, rigorous, and ethical human subjects review at this stage of my career. Thus, I conducted participant-observation of the cooking practices in my household by watching my mother cook. I took rigorous held notes as well as engaging in auto-ethnographic re-rxivity.

DISCUSSION

The Standard American Diet and Typical Indian Diet vary in many ways that contribute to their respective obesity, diabetes, and overall disease rates. This involves differences in what people most commonly eat and drink in these regions. Cultural differences in Ruence what people eat. Food types, preparation methods, preservation techniques, and ingredients vary among cultures. Food preferences are in Ruenced by the places where families live and the ancestors they descend from. Individual factors such as knowledge, personal taste preferences, mood, hunger level, health status, special diet requirements, ethnicity, and income also contribute to food choices. This paper highlights the most evident differences, which include fats, vegetables, oils, spice, and meat.

Fat is one of the macronutrients in food, along with protein and carbohydrates. Fats are chemically similar substances composed of fatty acids. These include liquid oils like olive oil, as well as solid fats like butter, vegetable shortening, ghee, and lard. The healthy fat in your body contributes to your energy levels, protects your organs, promotes cell growth, lowers cholesterol levels, and helps your body absorb essential nutrients.

Excessive saturated fat consumption increases blood cholesterol levels and clogs arteries, increasing the risk of heart attacks [12]. A diet high in unsaturated fat can contribute to a number of diseases. "Hydrogenated" fats can be found in packaged foods in the form of shortening. Shortening is a product of hydrogenating oils to form "trans" fatty acids. Degenerative diseases may be caused by hydrogenated fats.

According to many surveys, the average person over age 2 who consumes the standard American diet eats 79 grams of dietary fat of all kinds per day [13]. Among these fats, 26 grams are

saturated, 30 grams are monounsaturated, 16 grams are polyunsaturated, and 5.3 grams are trans. Men eat 81 grams of dietary fat per day, slightly more than the national average. At 91 grams of fat per day, boys and teenage males consume significantly more fat than older men. Girls and teen females consume an average of 51 grams of fat per day, while adult women consume 64 grams.

The amount of fat needed by an individual should be able to meet the requirements of essential fatty acids, provide palatability and not be too excessive to produce any harmful effects. Estimates show that 15-25 g of visible fat meets both the requirements of essential fatty acids and 3%-6% of the total energy needs. Visible fats derived from animal sources are solid, like ghee and butter, while those obtained from vegetable sources like groundnut, mustard, sunflower and safflower oils are liquid fat. In a country like India, even a rural diet which is primarily cereal based, the amount of invisible fat that is present is about 15 g, and this is able to contribute to nearly 6% of the total energy requirements [14]. Recommendations have also been made that calories derived from fat should not exceed 30%, meaning more than 80 grams per day, under any circumstances.

The amount of visible and invisible fat in diet in India daily across each region. A typical South Indian meal contains 28.1 g of fat, while a Punjabi meal only contains 21.9 g of fat. Gujarati and Bengali meals meet in the middle, containing about 25 g of fat.

There are many ways in which fat intake can be reduced. These include eating a variety of lower-fat plant-based foods, such as whole grains, fruits and vegetables. Limiting meat consumption to less than 6 ounces/day and choosing only fat-free dairy products can be beneficial. Replacing animal protein with beans and lentils as a low fat, cholesterol-free protein source at meals or snacks could help greatly as well.

In addition, vegetables play a major role in contributing to diseases, like obesity and diabetes. Reports have found that only 10% of adults are eating the recommended daily serving of vegetables in the Standard American Diet, and slightly more 12.3% are consuming enough fruit [15]. According to the U.S. Department of Agriculture estimates, 32 percent of our calories come from animal foods, 57 percent from processed plant foods, and only 11 percent from whole grains, beans, fruits, vegetables, and nuts. This is very concerning, considering how many health benefits plants yield.

Figure in a review of fruit and vegetable intake and weight management studies, it was shown that fruits and vegetables may help manage weight in several various ways. Fruits and vegetables are low in, allowing people to fill up on them and eat less calories than they may expend resulting in weight loss. They may also make a person feel fuller which makes her/him stop eating sooner during a meal or snack. This select may be due to the water and fiber content in fruit and vegetables that increases the volume a person is eating without an increase in calories. The review determined that replacing high-calorie 'junk foods' with nutrient-dense fruits and vegetables may be beneficial to controlling weight.

According to surveys, about 20% of Americans don't buy vegetables because they aren't sure how to cook them properly [16]. Although the research on the successes and challenges of educational programs are beyond the scope of this essay, this survey demonstrates that part of the solution must be public education and access to knowledge of how to cook vegetables in ways that are survey and healthy. This paper intends to contribute to addressing this need.

This can be tackled by educating the public on simple recipes to incorporate vegetables in their diet. Oftentimes, education and awareness is a key first step in combating issues. These programs and information should be shared to people at a young age, so they can get in the habit of eating healthy. Schools are a perfect space for this and it has been shown to be selective in influencing positive change in other issues, like drugs and addictions. Many bodies of literature acknowledge the challenges of this, but if possible, this would selectively solve part of the issue.

Vegetable production in India has grown tremendously since the mid-1900s. The vegetable production in India has increased 6 times from 19.1 million tonnes in 1961-1963 to 126.6 million tonnes in 2017-18 [17]. Considerably a large part of vegetable production growth is due to increase in yield rate which also doubled in India during the same time. Studies have shown a significant relationship between increased vegetable intake and reduced risk of weight gain and overweight or obesity.

Furthermore, oil consumption influences the prevalence of diseases, like obesity. Whether it's used to fry fast food, to the packaged foods, or to feed livestock, soybean oil is the most widely consumed edible oil in the nation, according to the U.S. Department of Agriculture. In moderate amounts, soybean oil can be healthy. It mostly consists of polyunsaturated fatty acids, which are a heart-healthy type of fat that's associated with several benefits. However, new research shows that soybean oil is linked not only to obesity and diabetes, but also to autism, alzheimer's disease, anxiety, and depression.

The consumption of vegetable oils increased drastically in the last century. Although some vegetable oils have been linked to health benefits, excessive intake of omega-6 is a concern. Researchers have hypothesized that chronic inflammation is caused by too much omega-6 relative to omega-3. The underlying causes of many common western diseases, including heart disease, cancer, diabetes, and arthritis, is chronic inflammation. Furthermore, observational studies have linked a high intake of omega-6 fat to obesity, heart disease, arthritis, and inflammatory bowel disease.

However, vegetable oil is not only popular in America, but in India as well. Food and agriculture companies recently imported palm, soybean, sunflower, and safflower oils from abroad. With a population of 1 billion, these companies were eager to make big profits. In an attempt to advertise their new oil products to the Indian population, food companies made bogus health claims. This steadily increased the demand for vegetable oil, rather than local oils.

The import of vegetable oils is expected to increase by four times over the next decade. The battle to go back to traditional oils

seems uphill, especially since large food and agriculture manufacturers sell cheap vegetable oils at incredibly low prices, making it difficult for local farmers to compete. Numerous studies have shown that people who consume more vegetable oils have lower cholesterol than those who consume a lot of saturated fats. Educating and raising awareness appears to be a practical way forward.

Spice is another factor that has been investigated as having the potential to improve health in a range of ways beyond obesity prevention itself. The most common spices in the American diet include oregano, ginger, basil, garlic, sage, rosemary, cinnamon, and cumin. They are often added to dishes for flavor. Researchers have found that spices and herbs possess antioxidant, anti-inflammatory, antitumorogenic, anticarcinogenic, glucose and cholesterol-lowering properties, as well as properties that direct cognition and mood. Some studies have shown that spices may reduce the risk of diseases such as high blood pressure, high cholesterol and Type 2 diabetes.

Spices have played a vital role in Indian cuisine for a very long time. These are some of the most valuable items of domestic as well as industrial kitchens. Among the most commonly used spices in India are cumin, clove, coriander, cinnamon, turmeric, fenugreek, and cardamom. With its potent antioxidant properties, cinnamon reduces cholesterol levels and triglycerides and inhibits inflammation. Cinnamon really shines when it comes to controlling blood sugar. It can lower blood sugar by several mechanisms, such as slowing the breakdown of carbs in the digestive tract and improving insulin sensitivity. Cloves have tons of antioxidants. These compounds help your body to fight free radicals, which damage your cells and can lead to disease. By removing free radicals from your system, the antioxidants found in cloves can help reduce your risk of developing heart disease, diabetes, and certain cancers [18]. As a whole, spices present many benefits to humans. Therefore, people should try to incorporate them more into their diets.

Lastly, meat consumption greatly affects health. Americans consume around 274 pounds of meat per year on average, not accounting for seafood and fish, or individual food waste. The total amount of meat consumed in the U.S. has increased by 40 percent since 1961. This is very concerning considering all the detrimental health effects bad meat brings. First, meat lacks fiber and other nutrients that have a protective effect against cancer. Meat also contains animal protein, saturated fat, and, in some cases, carcinogenic compounds such as Heterocyclic Amines (HCA) and Polycyclic Aromatic Hydrocarbons (PAH), which are formed during the processing or cooking. Meat also contains hormones, which increase your cancer risk. This is the reason many went vegan. Meat, dairy products, and eggs all contain cholesterol and saturated fat and contribute to America's top killers: heart attacks, strokes, diabetes, and various types of cancer.

However, red meat and poultry are great sources of protein. They also provide lots of other nutrients your body needs, like iodine, iron, zinc, vitamins (especially B12) and essential fatty acids. So it's a good idea to eat meat and poultry every week as part of your balanced diet. In general, red meats (such as beef, pork, and lamb) have more saturated fat than skinless chicken,

fish and plant proteins. India has the world's largest vegetarian population, with 40% of the country adhering to vegetarian diets. This may seem like a concern, with the benefits meat may bring, but meat brings far more disadvantages. Considering India has had lower diabetes and obesity rates, people consuming a SAD diet should try to limit meat intake to improve their health.

To better understand how to practically implement these suggestions, I observed my mother cooking infamous butter chicken, a popular dish in Indian culture. I watched her use certain healthy oils and ingredients as she cooked in her own style. These experiences made me realize that it is not as hard as people think to improve one's diet and make small dietary changes.

Ethnography

Food has always been a welcoming venue in my home. Back in my mother's days in India, a woman must know how to cook in order for her to be ready for marriage. I learned to cook as I watched my mother make new dishes every day. This one particular day, the aroma of cream and masala filled the kitchen and even spread upstairs. Intrigued by the smell, I skipped downstairs to see what it was. There, I saw my mother grabbing the masala or spice container, to add some flavor to the butter chicken curry. When I visited India, I remember seeing this container in every house. It's like salt and pepper jars for Americans; everyone has it. As she put a pinch of every spice in, I wondered how she knew how much to add. She explained that after making it so many times, she has an idea of the right amount. Also, every time she cooks, she would taste a spoon of the dish to make sure it's just right before serving. I noticed that she would add turmeric to almost every Indian dish. This sparked a memory of reading about the health benefits of turmeric, which link to improving heart health and preventing Alzheimer's and cancer. I asked my mother about it and she mentioned the benefits, but emphasized the flavor it adds to curries. It was also particularly interesting how she added everything by hand, whereas utensils are more commonly used in America. As a whole, the entire cooking and preparation style varies in both nations.

CONCLUSION

This study aimed to examine the links between culture, diet, and health through having indicators, including fats, vegetables, oils, spice, and meat. It shows a link between those following the TID and having a lower risk of obesity, compared to those who follow a SAD. This is due to the differences in diet, based on food preferences, ancestors, accessibility, expenses, and many other factors. It may seem difficult to improve one's diet, but in reality, only a few dietary changes in these areas can greatly reduce one's risk of disease. Culture evidently has a major role in the link between diet and health years.

RECOMMENDATIONS

Obesity prevention is something people perceive as out of their control. However, simple changes in diet can be the first step in

avoiding this and other chronic diseases. This study shows a clear link between eating behaviors and health. The five indicators, including fats, vegetables, oils, spice, and meat are only a few of all the influencing factors of health. However, these are the most common and can be simply changed in one's diet.

Regarding fats, it's important to understand the difference between healthy fats and unhealthy fats. Oftentimes, people think all fat is bad for you, but the reality is that people need fat for energy, just the right ones. In terms of vegetables, the more the better. They are important sources of many nutrients, including potassium, dietary fiber, folate, vitamin A, and vitamin C. Too much oil can be bad for you, because it releases high concentrations of toxic chemicals called aldehydes. The fourth indicator, spices, offer many benefits, as they fight inflammation and reduce damage to your body's cells. Meat, the final indicator that can be both good and bad for you. Meats such as chicken, pork, lamb and beef are all rich in protein. Red meat provides us with iron, zinc and B vitamins.

But, it has been shown that regular consumption of red meat and processed meat can increase the risk of type 2 diabetes, coronary heart disease, strokes, and certain cancers, such as colorectal cancer. Therefore, people should try to make these small changes in their diet to prevent diseases like obesity. However, eating healthy food does not mean taste has to be sacrificed. Adding favor through spice or seasoning can instantly make a bland dish appetizing.

Culture will continue to influence cooking styles. People from different cultural backgrounds eat different foods. The areas in which families live and where their ancestors originated influence food like and dislikes. These food preferences result in patterns of food choices within a cultural or regional group. These aspects are what makes us different from others and creates a whole new society, as food can influence the way people eat and their religious practices. People's cooking practices at home will also continue to affect the way they cook. For example, I will have a container (that holds spices) for when I settle on my own because it is what is currently used in my home. Additionally, I now know what spices go in what dishes because I have observed my mother make a variety of dishes. There are many factors that influence cooking styles, including heritage, diet, health, preferences, and religion.

For further research, it is critical to find more ways to make it easier for people to consume healthier foods. My ethnography suggests that there may be links between cultural norms for

eating together and health. Additionally, things like stress eating may be causing people to eat unhealthy foods. Stress can be alleviated through social activities, such as eating together-another practice that is common in Indian settings and that came up in my ethnography. It is crucial to identify these factors affecting health and food choices. Addressing these factors will increase the number of people following a healthier diet, and obesity rates will therefore decrease.

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