



Food Choices, Health and Sustainability

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Abstract

Human adaptability was boosted by the agricultural revolution in the world some 12,000 years ago. Agricultural production helped in achieving food security, followed by improved life expectancy. Due to the assured supply of food, non-primary activities also evolved. In response to this development, the twin process of industrialization and urbanization emerged in all major areas of secondary activities. Many urban areas became trade, commerce and manufacturing hubs. With technological intensification, modern day industries started to transform lives of urban dwellers. This new change was also experienced by the agro-processing units. People were no longer just dependent on food that were either locally found or limited by seasonality. This gave rise to processing of plant-based and animal-based food items which could be stored, canned, refrigerated and transported. Thus, food products were available to consumers residing far away from the regions of production. Industries started to profit greatly from food processing, while consumers benefitted from the wide range of products available with much ease. Gradually 'Ultra Processed Food' (UPF) became popular in fast food chains and market shelves. Cheaper food items provided hassle free, ready-to-eat food products, and were often associated with women's liberation from the daily grind in the kitchen. Marketing professionals and even psychologists further added to the flavour by aggressive advertising and luring customers towards this heavily processed chemical laden food. The present study focusses on the role of food processing industry in influencing food choices of people, along with the harmful impacts of these products. It also highlights on the positive interventions through holistic health care and lifestyle changes in reversing physical and psychological health, which is important for long term sustainability of economy and the environment.

Keywords: Food choices, Ultra Processed Food, lifestyle changes, advertising, holistic health

Introduction

Human beings have developed eating habits based on their biological evolution. Despite a similar food habit, dietary choices are determined by their geographical location and habits developed over time. Along with fulfilling the basic calorific need, a healthy diet is a pre requisite for healthy living. As food gatherers, humans were always dependent on whatever was available in their natural surroundings. Human species not only adapted well due to their biological responses, but culturally too they innovated various methods of survival which gave them wider options. It was through agricultural revolution; food supply was secured. They could further expand their food choices with industrialisation. With discovery of packaged and processed foods, they were no more dependent on local supplies and it was possible to procure food from any place in the world.

There has been an age-old debate; whether the first humans were herbivores or omnivores. Although this subject comes up again and again while discussing the healthier option, the common consensus is eating as per one's environment, climatic characteristics and dietary needs. Anthropologists often look for the starting point about the human's place in the trophic structure. When one compares the guts of the primates with humans, it is largely believed that humans were plant eaters and mostly survived on fruits and nuts like the monkeys or apes. However,

they kept on evolving and later also started hunting and survived on a meat diet. It is often debated that development of human brain may be related to their meat-eating habits. With domestication of animals, they were dependent on the milch cattle and gradually became lactose tolerant.

There are variations across countries and continents with respect to what was considered as a staple diet. Within a country too, dietary habits may be widely varied. It also made differences to their physiological structure. Even within India, one sees huge variation in food eating habits throughout the length and breadth of the country. Yet a common agreement could be, our ancestors were healthier than us. They ate well, worked extensively and lived healthier lives. Although modern science may claim and want us to believe that life expectancy has increased in present times due to a greater availability of food and medical interventions available to cure diseases. The demographic transition points out to the reduction in human mortality due to decrease in human death rate owing to medical revolution in drugs and vaccinations. And thus, our lives have improved in last few decades. One can also argue, whether we actually need medicines to cure us, since the natural cure comes from eating healthy or rather it doesn't allow us to fall sick at all.

Another research finding tell us, that it was not about plant or meat-based diet. If one looks into the wild, it is hard to find diseased animal if they eat from their natural surroundings and not depend on unhealthy food habits unlike humans. Thus, the diet that started to make us sick began, when humans learned to cook as pointed by Harvard primatologist Richard Wrangham. The discussion here is just not about the best diet options for humans. It is also about how industry and not environment decides our food choices. It is not about human experiments with diet but about industry's experiment with humans. Initially packaged items were used during times of distress or in places with extremely harsh climatic conditions. But it gradually became a convenience food globally.

Traditionally food was classified based on nutrients, carbohydrates, fats, proteins, minerals or vitamins. Over time, it was realised that processing of food of certain kind was causing epidemic kind scenarios world over due to prevalence of lifestyle diseases. Thus, the type of processing that a food goes through determines its nutritional value and health benefit. Nova classification came as a handy tool to distinguish food types in 2009. Later many modifications and studies were conducted. They identified four groups of food known as unprocessed or minimally processed, processed culinary ingredients, processed food and ultra processed food and drinks. The biggest problem turned out to be the *ultra-processed food group* that are not used in kitchen but synthetically prepared using products or additives that are not food but just mere chemicals. According to FAO, "*their convenience (imperishable, ready-to-eat), hyper-palatability (extremely tasty and flavourful), promotion by transnational corporations, and aggressive marketing give ultra-processed foods huge market advantages over all other food groups*". Various studies in different countries have showed profound impacts on the health of the citizens of those countries based on their ultra processed food intake.

The present study builds on the psychology of how and why we consume what we do. It explores the role of the food industry in this decision making with respect to media, marketing and subliminal psychology. The study highlights the multipronged effects of Ultra Processed Foods (UPFs) on one's health, both physical and psychological, along with its ethical and environmental impacts. The research aims to evaluate the two research questions that became the basis of the study. The researchers designed surveys for various age groups which were aimed at observing the food choices, and impacts of consistent healthy eating and holistic wellness.

Analysis of the Role of Industry

Although food preferences are our personal decisions, there are many guiding factors that easily define these choices. Inadvertently, through advertising we are often trapped into believing why we should go for a certain kind of products. There are signs that can be connected together as evidences to understand the pleasure trap that we face in making everyday decisions. The human brain is often fooled by carefully crafted images of food and other products that plays with our mind. Advertising is not a simple exercise of making a product attractive but also has a motive to create a deep psychological imprint on the people and especially the children. The craving for a particular food is further accentuated by the chemical inputs that go into it, which may even be harmful for our health in the long run. The content analysis of fast-food advertising in digital and social media have been done thoroughly by the researchers to understand the root cause of the problem.

The perfect image of that burger or pizza with cheesy look, garnished with vegetables make our craving quite strong. Many of them are even addictive like those cans of cold drinks or the perfect crunch of the chips loaded with sugar and harmful salt. There are umpteen examples where companies decide on a certain sign based on psychological inputs. It is not just the management experts but also the psychologists who are hired to send those hidden messages that unknowingly influence us. Marketing consultants and industrial psychologists work tirelessly to research the numerous ways in which to lure us into becoming consumers, by invigorating and rousing our inner desires. They have discovered that many decisions are more often than not made from a subconscious part of the mind rather than the conscious one. Sometimes even the timing of the advertisement is decided to make it impactful.

Amy E. Herman refers to how “*Unconscious biases help us make decisions, whether we know it or not*” (Herman, 2020). Food advertisements combine all of the cues that our subconscious mind will pick up. These strategies involve playing with the design and colour of the logo, wordplay and use of imperative voices in the catchphrase. The catch phrase ‘*No can eat just one*’ or ‘*taste the thunder*’ or ‘*kuchh meetha ho jaye*’ are few of them. Individuals may not consciously realize how any of this is affecting them but it is constantly impacting their brains, minds and bodies. The best way to understand it is how most people pick up a similar trend or habit so quickly. How can large diverse people from different places and background think in a similar fashion?

In 1988, Noam Chomsky and Edward S. Herman published a book called ‘*Manufacturing of Consent: The Political Economy of the Mass Media*’ which highlighted that the ‘market’ dictates what we like and consume. “*Manufacturing consent is not about brainwashing people but about controlling the information they receive and shaping their beliefs and opinions*” (Herman, et al., 1988). The issue at hand is, when manipulated and biased advertisements were curated and displayed around, especially on television, people were unaware that this was propaganda and that corporations were simply trying to get individuals to buy their products by distorting the truth. Thereby, advertisements promoting a certain food product based on fraudulent or fictitious studies or theories seeped into the knowledge base of ordinary families. These narratives have become strong beliefs and have continued to affect the daily food choices of individuals.

In a similar manner, Edward Bernays used cigarettes with the phrase “*Torches of Freedom*” and hired fashionable young women to smoke at the 1929 Easter parade and other demonstrations, making sure they were photographed and their images printed in newspapers. The sales of cigarettes increased drastically as women followed these very seriously. The pan masalas today are promoted by famous celebrities and their reach has increased to cover all economic backgrounds. All Alcohol adds despite being banned use surrogate adds to popularize them, which they achieved by being associated with packaged water, health drinks and other items.

In a talk by Dr. Michael Pollan on ‘*How Cooking Can Change Your Life*’ for the Royal Society of Arts UK in 2013, he discussed about how marketing has played a major role in the dismantling of home cooking and the increased sales of food, whether processed or gourmet and thereby the increase in obesity and other nutrition related illnesses. Women were sent subconscious signals about their liberation that can come through, by leaving cooking and ordering food from outside. Men are often portrayed to be the ‘new age cooks’ making instant noodles during dinner or making tiffin for their children made of frozen items, or that ready to eat meat products and serving the family. They only talk about role reversals but there is no concern for nutritious food.

Now the concern with ultra processed foods is multi-fold, firstly, in order to create long shelf-life products which also look fresh, companies require a large number of preservatives and chemicals; secondly processed foods that are artificially flavoured or coloured requires chemical dyes and flavouring agents. With regards to the above-mentioned issues, researchers are discovering that most of these chemical agents added are quite harmful for the human microbiome. Preservatives like BHA (Butylated hydroxy anisole) and other nitrates, as well as dyes/AFC’s (Artificial Food Colours) like Red 40, Yellow 5 and 6 have been known to be carcinogenic.

Thirdly, it is the high frequency of the consumption. If one has to cook the same products, it would take a lot of time, effort and money and would limit its consumption to once in a few months. However, if it is available all the time, for cheap and requires only the effort to go buy it (or now, to order it online), the frequency of its consumption is doubled and tripled and ‘special occasion’ foods turn into regular food. It means, not only people are consuming chemicals, they are also consuming them extremely frequently. Fourthly, the food industry puts in a lot of research and money to increase the ‘addictive quality’ of the food products they produce. Dr. Pollan refers to this as the ‘*Craveability*’ and ‘*Snackability*’ of the product. Additionally, the food industry engineers supermarket displays as well. One may notice that all the super addictive products are placed at eye level racks

while the healthy foods are stacked in the lower racks, so that our eyes are first met with processed products and are thus tempted to pick them up.

The fifth concern is a public food crisis, which exists in the two places it should not. The first are schools and the second are hospitals. If one ever noticed a school cafeteria or canteen, one will begin to see the issue. A large majority of the food products sold are processed or highly processed foods loaded with salt, sugar and unhealthy fats. Children are easily misled and addicted to these foods. And the process starts as early as pre-school stage. In various small experiments held by our research team, it was quite evident that children and teenagers were well acquainted with the logos and catchphrases of the popular fast-food brands in the city. Even at the hospitals, vending machines and canteens serve processed foods despite being a repository of ill patients attempting to overcome their illnesses, like Diabetes and Heart Diseases, many of which are caused by ultra-processed food.

Finally, some of the food items are slowly metamorphosed into ultra processed items in great packages. They no longer have to wait for harvest season, food rarely has to be thrown away because of the low shelf life, as this food can be produced quickly and cheaply by machines, and are available throughout the year. Items like breads, jams, peanut butter, cakes, sweets, juices, dips, baby food are all victims of this devious transformation. Even though the companies sometimes claim that these products are organic or made from pure food items like vegetables, nuts and fruits. Yet when one looks into their labels, one can find only a very miniscule percentage of the original food source. The number one reason for all these marketing gimmicks is the profits that the food industry can make through these sales. The consumption rates continue to rise, despite the information that such food is the bane on human health.

Some of the other concerns are popular trends and food fads related to dieting and alternative diet strategies. Most of the times, people are juggling with one or the other diet plans especially those who are looking to either reverse their diseases or are in their weight loss journey. Different stakeholders make dissimilar claims over the pros and cons of a particular diet type. Many of these plans only bring short term outcomes. But to get long term health benefits, sustainable measures are required. Health is eventually made up by one's food choices which is consistently followed and may take many months or even a few years to show its results. Sometimes following these diet fads may even cause nutritional deficiencies and eating disorders. Whether it is Atkins diet, or Keto or Paleo, or gluten free, any of these obsessions can be do harm if done without careful considerations for nutritional requirements.

Some dieticians also name them as 'superfoods' for which people may go out of their way to acquire it. This fad may even result in over production of certain products at the cost of the environment. There may be serious ethical concerns on growing any of these superfoods. Sometimes the scientific claims may not be fool proof. Fad diets may emphasize on elimination of particular food group, either carbohydrates, or fats or proteins, and not eating in balanced amount.

A growing number of health programmes, influencers and studies are stating that the human body requires a large amount of protein to be healthy, fit and build muscles. And that this protein can only be sourced from the meat of animals and eggs. Similarly, the narrative around milk has also been spun to make consumers believe that having milk makes their bones stronger and prevents against bone related issues, referring to milk as the highest source of calcium. A nominal demand is fine but it is disproportionate, it effects health as well as environment. Another product that sells like hot cake is gluten free products. Market shelves have multiple products that are highly priced packaged foods. Most consumers do not understand the ambiguities related to alternative diet plans. They are hardly aware of the side effects of these skewed plans as there cannot be any quick fix solution.

There is another side of the story, with markets promoting these fads by bringing alternative packaged items with a lot of advertising. People in jobs often find it difficult to spend much time in meal preparation especially if it involves certain kind of buying and cooking. One can easily be lured by packaged food items which help save time when preparing the required meals to fulfil specific diet plans. For example, as a meat consumer, individuals often order frozen meat items and canned items so they can store it for a long time, not recognizing that even though this fulfils their diet plan, it also brings with itself the concern of preservatives and chemicals. However, sustainable health is about positive lifestyle changes and not replacing normal diet till the time it is extremely essential.

Additionally, as discovered in due course of the study, the industry also manages to either hyperfocus or undermine the role of physical and mental health that is paramount when we assess the overall health of an

individual. The industry may encourage individuals to eat what they want as long as they go to the gym regularly and burn the calories, thereby trapping them in an endless gain-and-burn calories cycle. This gym-obsession can be seen in a large number of individuals, especially the youth and unfortunately takes away one's focus from functional and mobility exercises necessary for the body's health. Or they may promote protein powders and other health supplements which they claim, is pertinent to the proper development of the individual. They may also wish to distract us from physical fitness by promoting the body-positivity movement and suggesting that wanting to shed weight or burn fat is 'fat phobic' idea and that one should accept their body as it is.

The industry also repeatedly displays 'comfort foods' like ice creams, chocolates, coffee, alcohol and other products that they promote while attempting to highlight social issues like menstruation, pregnancy and mental health concerns in movies, tv-shows and advertisements. This promotes specific cravings and continually ensuring there is confusion about what health really is and how it can be achieved. Furthermore, they may even induce a sense of panic about mental health often leading to people not paying enough attention to other health factors.

Impacts of Unsustainable Food Choices

There are multiple impacts of unsustainable food choices that the present generation is following. One of the major obstacles to good health is extreme dependence on 'ultra processed foods. Along with health, there is a significant impact to the environment due to this overdependence and the processes involved in producing them. Some of them also have ethical concerns as it results in cruelty and endangerment to some species.

1. Physical Health

Impacts of Processed foods: In an article published by the Harvard School of Public Health in their journal, 'The Nutrition Source called Processed Foods and Health', it was explained how the number one issue with processed foods is that many vitamins and minerals of the original food source are destroyed due to the overcooking, heating, drying and addition of chemicals. According to evolutionary psychologist Dr. Doug Lisle, the issue isn't that people necessarily want to keep eating processed foods but rather their "*mechanisms of satiation are being fooled*".

Processed foods, even when consumed heavily does not trigger the receptors in our stomach which in turn leads it to send signals to the brain that the body needs to consume more food. Processed foods require double or even triple the calories and thus more food for the stomach to feel full. Despite being calorie dense, such foods are lacking in essential nutrients and are also quicker to digest and require the individual to eat more frequently in order to satiate their hunger. Processed foods contain an unhealthy level of salt, sugar and fats, which are not just preservatives but also make the food taste better. However, these items consumed in excess are leading causes of obesity, heart disease, diabetes and other lifestyle diseases. Additionally, the many chemicals and dyes present in processed foods are extremely dangerous for our health, many of which are known carcinogens.

One of the myths around diabetes is that it is caused by eating lots of sugar or lots of carbohydrates but as diabetes expert and physician Dr. Neal Bernard explains, "*The cause of diabetes is a diet that builds up the amount of fat into the blood*". Particles of fat build up on the cells, which causes *Insulin Resistance*. And processed foods are loaded with fats. Cardiologist Dr. Luke Laffin states "*too much sodium can cause fluid retention, which can increase blood pressure*", which is a major risk factor when it comes to heart diseases, like heart attacks, strokes and heart failure. Once obesity sets in, it leads to the chances of many other chronic diseases developing.

Impact of specific food choices: Excess processed meat consumption, especially red meat has been linked to increased heart diseases, type II diabetes and a variety of cancers. In a conversation with a doctor in our study, he explained why deep fried or ultra processed meat is harmful, "*If our skin was burned, there would be a blister, ... what's inside? Pus and bodily fluids! The same is true for any animal's skin*". The fluids oozing from meat isn't just oil, but also its bodily fluids and pus. Animals are fed many antibiotics to safeguard against diseases or steroids to have larger muscles also come into the human body due to their consumption and interferes with their hormones. The World Health Organization has classified many of these processed meats as Group 1 carcinogens, like salami, hot dogs, bacon, canned meat etc.

Excess milk consumption has been correlated to cancer and bone related issues. In a famous study by Dr. Colin Campbell on milk, he experimented on rats by creating two control groups one of which were given five per cent

Casein and the other was fed 20 per cent Casein over a period of 12 weeks. Casein is the main protein in milk. It was found that the 20% group had increased levels of early liver cancer tumour growth as compared to the 5% group which had no signs of cancer. Dairy products contain no roughage, no complex carbohydrates and are very low on vitamins and instead are loaded with saturated fats, cholesterol and animal protein. Prof Dr. Claus Leitzmann, a German nutritionist and biochemist, explains how tests on non-milk/dairy consumers has shown lower incidences of Osteoporosis compared to regular milk and dairy consumers. Cows are regularly injected with growth hormones so they produce more milk and often than they usually do. This growth hormone also comes into the human body when individuals consume milk. Additionally, to meet the food demands of a high number of cows in dairy farms, farmers have switched the natural diet of grass with cheaply produced and available corn which is highly fattening. Despite milk being considered a natural and healthy item, it inevitably becomes processed due to the high demand and production, leading it to be more harmful than beneficial.

Similarly, fad diets like Veganism are also not clear of health issues. Despite being considered the emblem of health, vegan processed foods in the form of chips, cookies, and cakes are highly unhealthy and can still cause obesity and other illnesses. Additionally, as is the issue with processed meat, replacements meat products like plant-based sausages may also contain high levels of saturated fats, sugars and salts. Veganism has also been known to cause anaemia, be hormone disruptive, and B-12 deficiencies. Other diets too may lead to muscle loss, nutritional deficiencies, electrolyte imbalances, impaired bone health and hormonal risks like infertility.

Effects of lack of attention to physical fitness: A lack of exercise can hinder our health and cause even more illnesses. According to various health experts, one can consume a very healthy diet and still find themselves suffering from various diseases and concerns. The John Hopkins Medicine journal published an article on the Risks of Physical Inactivity, stating that a lack of physical activity is a risk factor for cardiovascular disease, high blood pressure, type 2 diabetes etc. Some studies also display that individuals who are physically active have a lower likelihood of developing coronary heart disease, even when scientists had accounted for their lifestyle issues like smoking, drinking and diet. Physical inactivity increases the odds of developing some forms of cancer, succumbing to obesity related issues and increasing the risk of falls and fractures in older adults. Furthermore, lack of physical activity affects both one's inner biological health as well as one's mental health.

2. Psychological Health

Effects of processed foods: In a recent article by The Times of India, mentioned a global study by US-based non-profit Sapiens Lab found that there was a direct link between consumption of ultra-processed foods (UPFs) and a declined mental health and wellbeing. The study took a 3 lakh sample from 26 countries of the world which also included 30,000 individuals from India. The study concluded that the percentage of people who were mentally distressed/ struggling increased with higher percentage consumption of UPFs. The study also reveals a disturbing fact that, “*over the next decade UPFs are projected to grow faster than India's GDP growth...*”.

The excess sugar and chemicals in processed foods can lead to inflammation throughout the body and brain which may contribute to psychological issues such as mood disorders like anxiety and depression. Processed foods have also been linked to an increased risk of cognitive decline in individuals, which can lead to concerns like Dementia and Alzheimer's. Additionally, the high addictiveness of processed foods leads to Dopamine spikes and leading to frequent consumption of these foods. Such spikes make individuals irritable, increasing hyperactivity in children and adults and also reducing their capacity to focus.

Effects of fad diets: A major impact of fad diets on the psyche of consumers is the underlying body image issues it comes with. Many people undertake such diets to lose weight, without taking into considerations the negative effects it causes. Individuals engage in such diets, without understanding if it works for their body type. They believe that if they eat a low level of sugar, or carbohydrates or fats, that it will help them shed weight, not realizing that often nutritional deficiencies often lead to the body storing more fat or making it difficult to achieve optimal health. Individuals who engage in such diets are more prone to suffering from eating disorders like Anorexia and Bulimia; or Binge eating because of their cravings. These conditions lead individuals to get stuck in a vicious cycle of shame, guilt and stress and reward eating.

Effects of lack of attention to mental wellness: Dr. Brock Chisholm, a psychiatrist who was the first director general of WHO famously stated “*without mental health there can be no true physical health*”. Chronic stress, anxiety and depressive symptoms are severely overlooked and cause a variety of both psychological and physical

issues. As individuals experience numerous challenges, a healthy mind will help them cope with it, while the contrary can easily lead individuals to spiral in breakdowns which can affect their physical health as well.

3. Ethical Concerns

Mostly the ethical concerns revolve around raising and killing of animals for meat, artificial insemination for excess milk production and feeding cattle's with fattening products and not their original food. In industrial production the calf is often taken away from the female cattle. If they are female it is raised for milk, and if it is male, they are sent to slaughter houses. Preference given to a certain crop due to fads, over other staple crops due to profit is also unethical for the farming community; as it may impact the nutrient dense food production. Use of heavy chemicals can also be considered unethical as it leads to diseases that are avoidable. Cross breeding is another bad practice.

At times, exploitative labour practices to suit the industrial needs has effect on the farmers. Industry is also playing with the health of the consumers, by wrong labelling of products, adulteration and dubious advertising. They often create confusion or fog around a certain product and thus leads to over eating, addiction and substance abuse. Sometimes vegetarian product promoted as a healthy option may have all the wrong elements in it. The use of GMOs is harmful for the consumers who believe that the food they are eating is healthy. In some countries drug manufacturers are aware of the effect of ultra processed food yet they do not warn the people against these products due to the mutual benefit and vested interest. Finally, the sustainability of the planet depends on food choices, ethical behaviour of the agri industry and the growers of the food.

4. Environmental Impact

The type of food products that the industry is promoting has immense impact on the environment. However, the assessment related to this effect has not been quantified properly. Since the effect is from farm to the time it reaches the plates of the consumers, we often forget some of the crucial stages in between. There is a hidden cost of these food items as pointed out in a report published by Food and Agriculture Organisation (FAO) in November 2023. India has the third largest hidden cost after China and USA.

Plant based food can also have impact on the environment if they are unsustainably grown or are eventually processed. Relatively they may have less impact than meat-based diet but it all depends on how they have been acquired and in what form? Some of the superfoods like Avocado or Quinoa are either extensively grown replacing other important crops or are imported. Superfood such as Kale is as good as spinach but is availed at a huge monetary cost. Growing cocoa, palm oil and soy, has been responsible for destruction of tropical forests especially in amazon, West Africa and South East Asia. Vegan's delight that is, nuts such as cashews, almonds and walnut are most water intensive and need large land holdings. Tilling of agricultural plot can also lead to GHg emissions and also cause lot of soil erosion.

Dietary footprint increases with every new diet plan that are not regular, local or seasonal. If it is packaged or exotic, due to transportation and refrigeration, energy cost increases. Processing and preserving needs additional energy. Anything which is processed has to be packaged well that adds to the accumulation of packaging waste material. The chemicals that are used for processing is not only harmful to our environment, it also pollutes the ecosystem. Thus, cookies, French fries, candies or other ultra processed items may be vegetarian or even vegan but they also have impact due to the processes involved in their production, to the stages of disposal of packaging material. Thus, there should be a reasonable demand for any food that may have higher footprint.

The higher demand for meat-based products leads to excessive deforestation, loss of biodiversity, unwarranted water use and emission of greenhouse gases. Too much reliance on meat products has its own ecological fallouts due to the agro practices requiring large amount of land and water. It needs 70 per cent of world's freshwater and contributes to 80 per cent of freshwater pollution too. Besides it results in more overgrazing or growing of fodder crops, sometimes at the cost of encroachment on precious forest land. Rearing livestock for both meat and milk, generates huge amount of methane which is a potent greenhouse gas. Beef has the highest carbon footprint followed by dark chocolates, which is again followed by mutton and dairy. While the ranking of water intensive food products is cheese, nuts, fishes, prawns and beef.

According to Selin Oguz in an article in the Visual Capitalist, *"the production of beef is extremely resource-intensive, demanding substantial land, water, and energy resources. Cows also produce methane during their*

digestive processes, a gas that has a warming potential 27–30 times higher than that of CO₂ over a 100-year time period.” Also, animal-based products are the highest user of water among the list of water intensive plantations. One should remember that it is everyone’s duty to make the right decisions and avoid which is ethically wrong. Therefore, consumers should have the final say while deciding what goes into their plate. As consumers, one should be well aware of the food choices and also raise objection against wrongful doings.

The Positive Effects of a Holistic Health Lifestyle on Overall Health

In 2020, as the world struggled with Covid and the idea of ‘health’ was being questioned by various experts, the researchers went on a mission to explore in depth the myths and narratives surrounding health and wellbeing.

As the researchers delved into a variety of articles, studies, documentaries and books on nutrition, they were introduced to the works of Dr. T. Colin Campbell, a biochemist, whose work focuses on nutrition and its effects on long-term health and is the Jacob Gould Schurman Professor Emeritus of Nutritional Biochemistry at Cornell University, USA. He is famously known for a 20-year study he conducted in China, and its culmination in the form of the book ‘The China Study: The Most Comprehensive Study of Nutrition Ever Conducted and the Startling Implications for Diet, Weight Loss and Long-term Health’. The study outlined the mortality rates due to numerous types of Cancers and chronic illnesses from 1973 to 1984, covering 65 counties in the country using surveys, blood and other tests from 100 people from each of the counties.

The researchers came across Nelson Campbell, Dr. Campbell’s elder son who had created an initiative known as PlantPure Communities Inc., which has ‘Pods’ across the globe. The researchers reached out to the PPC Pod Network to collaborate and were directed to set up a Pod in their own city, which was subsequently set up in July 2021. The aim of the Pod was to create awareness and give out information about a Whole Foods Plant based diet, provide support and share recipes. However, after discussions on cultural and geographical food habits, the researchers felt it was necessary to widen the food spectrum to include meat and dairy in moderation.

Subsequently the researchers decided to conduct an independent study with two key research questions;

- a) Does subliminal marketing influence food choices of children?
- b) How will members of the community observe the changes in their overall health as they follow this lifestyle?

To study these research questions, the researchers created a testing mechanism, wherein they conducted three simultaneous close-ended questionnaire surveys with purposive sampling;

- I. A survey quiz with a population size of 150 school going children, to understand the range of psychological influences the food industry has on children and how difficult it is to abstain from UPFs.
- II. A perception survey with a population size of 42 individuals between the ages of 20 to 30 with self-reported psychological distress and physical inactivity to observe the perceived differences over six-month survey period.
- III. Data analysis with a population size of 23 individuals between the ages of 45 to 55 with reported cases of Hyperglycaemia (High blood sugar), to observe possible physiological changes in individuals who consistently chose to follow the defined programme and utilized a pre and post-test.

The recommended programme for respondents of survey II was;

- a. 6 days a week of healthy and less processed food, reducing the intake of UPF to only once a week. The UPFs consists of any food item that contains artificial sweeteners, dyes, emulsifiers and preservatives.
- b. Minimum 20 minutes of one’s preferred physical activity for 6 days a week
- c. Engaging in one’s preferred therapeutic experience once a week such as meditation, journaling, or creative activities

The defined programme for respondents of survey III was;

- Avoiding UPFs, refined sugar, trans saturated oils and fats, processed and simple carbohydrates as well as processed meat and dairy for 6 days a week
- A 24-hour fruit fast once in 15 days
- A minimum of 30 minutes of yoga and pranayama

Findings of the study

Results of Survey I: The quiz revealed that 80 per cent of the children were well acquainted with the logos, advertisements and catchphrases of popular food brands. 75 per cent reported that they consumed some form of UPFs almost every day. 95 per cent reported that they order in or dine in popular fast-food joints whose menus offer UPFs. 85 per cent reported that their school cafeteria or kiosks sold aerated drinks and fried food items.

Results of Survey II: The results of the pre programme questionnaire were compared with the post programme questionnaire results which revealed that those who consistently followed the recommended regime observed a perceived positive change in their;

- Psychological health which was measured through improvements in better management of day-to-day stressors, increased focus and concentration, increased creativity, improved relationships and engaging in healthy coping mechanisms.
- Physical fitness which was measured through improvement in stamina, quality sleep, reduced exhaustion and increased energy levels.

Results of Survey III: The results of the post regime test demonstrated a reduction of heightened blood sugar levels in most individuals who remained consistent. 40 per cent experienced a drastic reduction of Hyperglycaemia, while 55 per cent experienced a moderate difference and 5 per cent experienced did not show noticeable improvement.

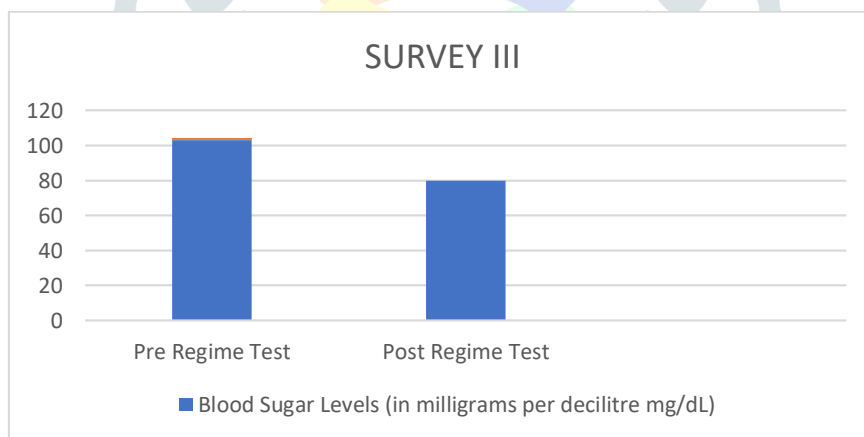


Figure 1: Pre and post regime test results of the respondents of survey III

Overall, it was also noted that a glaring number of individuals did not know that most fruit juices, sports, health and energy drinks, energy bars, usual beverages, and diet food item are artificially sweetened, flavoured, dyed and loaded with chemicals. Furthermore, despite many individuals possessing this information they still consume these products due to a lack of unawareness of the extent of its harm if consumed regularly. A large number of individuals were also unaware that one's health is hugely affected by one's diet. And that a healthy individual is one whose physiological and psychological health as well as physical fitness is well maintained.

Finally, the limitations of the study included individuals' difficulty to remain consistent with the health plans, resistance to change their habits as well as deep-rooted contemporary beliefs. Despite our best efforts at promoting healthy food choices among the respondents the researchers did not have any control over the quality of the food items and which may lack essential micronutrients and despite being a healthy item may be loaded with pesticides.

Conclusion

The researchers concluded that all three of the surveys revealed that the food industry influences individuals' choices without their conscious awareness leading to high consumption of UPFs. There is a lack of cognizance about the harmful and long-term effects of the chemical ingredients in processed food items. There is a pressing need for parents to educate their children about how these attractive food items that they ask for is not healthy and will lead to concerns later. Furthermore, there is a need for young adults and working professionals to recognize the benefits of home cooked meals. Finally, older adults must understand the need for holistic health habits that need to be inculcated and followed religiously.

Through the study, it is understood that individuals who generally eat healthy and less processed foods, avoid high consumption of processed meat and dairy, reduce intake of simple carbohydrates, refined sugar and saturated fatty foods will build good health. Health is incomplete without focusing on Holistic Wellness that has been a part of India's rich heritage of the Yogic lifestyle. It states that a healthy diet should be supplemented with fasting and natural detoxifications, regular physical activity suited to one's body which different schools of Yoga achieve the best, and consistent mental and spiritual health care is key to health. This has been shown to have drastic results and can even reverse lifestyle diseases as have demonstrated by many nutritional experts across the world.

Finally, sustainability of the earth is deeply linked to the sustainable food choices that individuals make on a everyday basis. Eating local, seasonal, fresh and mostly plant-based foods is the answer to our health, as well as ethical and environmental concerns.

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