

An Investigation on Dietetics and Nutritional Interests using Quantitative Analysis in the Existing Prevalent Conditions of COVID-19

H. Mary Henrietta¹, A. Stanley Raj^{2,*}, M. Megavathi³, V. Kavini³, B. Giridharan³

¹Assistant Professor (SG), Department of Mathematics, Saveetha Engineering College, Chennai, Tamilnadu-602105, India.

²Assistant Professor, Department of Physics, Loyola College, Chennai, Tamilnadu-600034, India.

³UG Scholar, Department of Agriculture, Saveetha Engineering College, Chennai, Tamilnadu-602105, India.

Corresponding author:

A. Stanley Raj, Assistant Professor, Department of Physics, Loyola College, Chennai, Tamilnadu-600034, India.

Keywords:

Healthy Eating, Malnutrition, Healthy Eating Level, Supplements

Received: Jun 07, 2021

Accepted: Aug 14, 2021

Published: Aug 26, 2021

Editor:

Jong In Kim, Korea

Abstract

This paper wishes to address the main concerns of food patterns and food consumption during the epidemic with quantitative analysis from various regions of Tamil Nadu. It was noted that it is more important than natural foods. The current epidemic had a profound effect on the

humankind, recognizing the importance of staying healthy is the crucial aspect. In time, further research was conducted on the diet of the Indian subcontinent. Everyone should know about the importance of health and how nutrition contributes to the health and equality of people around the world. The main purpose of this study was to identify the importance of good nutrition and disease prevention.

Introduction

Good nutrition is a key element of a healthy diet that are rich in antioxidants help maintain a healthy pace but foods high in protein cause high levels of calcium content which ultimately weakens bones [10] Improper nutrition not only affects major disorders, but also minor disorders such as obesity, weight gain, etc. Obesity affects children between the ages of 12 and 20. Due to the use of obesity which causes unwanted and fast food, they are affected by obesity regardless of age [14]. Nowadays, skipping breakfast is an easy task but also associated with obesity. Loreen has done

research on the causes of obesity and the food it causes [22] Nutrition not only improves welfare of humans but also improves sleep patterns in humans. There is growing evidence that sleep has a direct effect on a diet [20] Studies show that high levels of nutrients and minerals will affect the sleep cycle and the life span of both people for better and worse [11] Type 2 diabetes has become a major global problem and affected patients are more likely to be exposed to high-density protein and lipoproteins [15] . A balanced diet should be an adequate supply of vitamins, minerals, and nutrients. There are many types of vitamins but an increase in energy and energy intake of vitamin E is recommended [21] Students are more likely to be attracted to junk food and fast food through colorful advertisements and promotions by companies. It also tests people negatively [1] . A healthy diet should include a recommended amount of carbohydrates, fats, proteins, minerals, and vitamins. Studies show that low carbohydrate and bowel syndrome disorder lowers serum levels [9] Food should be eaten with the right amount of nutritious content at the right time. Eating at different times will also affect the quality of life [7]. The level of good hygiene should be maintained to lead to faster health and proper vegetarian and fruitful activities are made for a healthy diet. A healthy diet should be maintained to lead a healthy pace and proper activities of vegetables and fruits are made for the production of a complete diet of healthy foods [8, 1].

The green revolution has had a major impact on the agricultural sector which has led to an increase in non-profit farming. The opposition to the green revolution had a profound effect on world capitalism. This is clearly stated in [13] Many were unaware of the controversy over the green revolution and its impact. Excessive use of chemical fertilizers and pesticides has seriously damaged soil quality. This overuse of chemicals has led to low-yielding plants and the availability of these plants does not provide adequate nutrition. The soil is

poor and this poses a real challenge to growing crops naturally. Apart from these factors it has also been found that there is a complete misunderstanding among many about nutrition. [26]

Myths and misunderstandings are commonplace to many which led us to take this study. Fast food began to dominate the new world generation and severely disrupted nutrition. Recent studies have found that people who do not eat fast food are more active and energetic compared to people who eat fast food [28] Some awareness has been created so the interest in organic food has increased among people. But consumers who prefer organic foods do not mean the word organic. Consumer perceptions of consumers' differences in their preference for organic food are described in detail in [25] To make the right choice we need to know the right things about food. Misconceptions about nutrition ideas need to be changed. Detailed information on nutrition and exclusion and this is described in detail in [17]. This misconception is based on unconventional lifestyles. Life changes changed the way we eat. Abnormal dietary patterns at odd times affect individual metabolism [29]

Recent research suggests that proper eating habits regulate sleep and wakefulness. It also regulates the body's metabolism and as a result the effects eventually have health effects [20] Nowadays people think that life means organic food and organic food means the same. Consumer sustainability has increased dramatically in recent years. Studies show that consumers of organic food prefer sustainable concerns over a sustainable lifestyle [4] .To increase the consumption of organic food these products must be marketed for the benefit of consumers and manufacturers [16] All of these analyzes and comparisons are done using mathematical principles such as counting, chi tests. Improving mathematical concepts and educating on the importance of healthy eating Australia has brought both together for the benefit of the new generation [6].

In all of the above we know that nutrition plays an important role in survival. There is a change in the mindset of people about eating nutritious food before and after the disease. Although epidemics are found in many parts of the world in some parts of Asia, the situation has changed for the better and there is a big difference between pre and post-epidemic food imports. Few simple questions were asked during and after the human epidemic that were analyzed in detail and described in this paper. This paper discusses the importance of healthy eating and why it is not available.

Motivation

The term nutrition refers to the nutritional and nutrient cycle. It is a great way to eat vitamins and minerals, which are not found in all foods. If the food we consume does not contain vitamins or minerals then we will face deficiency. Generally, nutrition strengthens our immune system and can be accomplished by consuming fruits like guava and gooseberry.

Foods that are rich in vitamins are a great source of anti-oxidants which helps to maintain a healthy pace of life. Consumption of fruits, vegetables, meat, fish, poultry and fatty milk. It protects and acts as a guard against many diseases. It provides great physical strength. Healthy eating includes eating carbohydrates, fats, and protein altogether. Healthy eating for the rest of your life promotes healthy pregnancy outcomes, supporting normal growth, development, and aging. In addition, it helps maintain a healthy weight, and reduces the risk of chronic illness leading to health and well-being.

Food affects our thinking. It helps us focus and live longer. We all know that diversity is a spice for health, we should know that in addition to eating a variety of foods rich in vitamins, minerals, and other nutrients. Eating together vitamins and minerals will help you feel and look better than ever.[31]

A healthy plate [32] should contain essential oils, regular water intake, vegetables, fruits, etc.

- Onions (vegetables) - have been shown to lower

cholesterol, reduce the risk of stroke, and reduce the risk of various types of cancer.

- Grapes - rich in antioxidants and can protect against chronic diseases, diabetes, cancer and heart disease.
- Kiwi (fruit) - reduces eye problems and enhances vision.
- Healthy fats - start eating olive oil and canola oil and reduce butter intake.
- Vegetables rich in vitamins, fiber, calcium and nutrients
- Every food item has its own unique beauty, but the most important thing that needs to be considered is the ratio of those that provide nutrients to the body. When talking about a healthy plate, one should be determined about the time required for the cooking process, since it changes the composition of the nutritious food, some nutritious food is available in raw form and some good after cooking. We all know that most animal-borne diseases are due to improper cooking. Some viruses like Ebola, bird flu, corona is all due to improper cooking of meat.

Nutritional Analysis

In this study, we examined the public perceptions of nutrition with simple questions, and found that people did not like nutritious foods before the epidemic. The epidemic was recognized as a source of fear for the people and made them realize the importance of healthy and nutritious food. Nutritious food is once in a blue moon for most of us. The green revolution had helped us to see the dirt in the soil and to take steps to reclaim it. Nutritional intake depends largely on the soil and the availability of water available from the food source during its harvest. In 1800 independence was our only goal when the world's population could be only 30 crores. In recent years we must achieve independence and we must produce nutritious food.

Through this study, we found that most people prefer to have processed or fast food to satisfy their taste

buds. Once in a while, using these foods is okay but not always. While another half people choose to follow a healthy diet and think that the consumption of these unhealthy foods leads to dangerous diseases. People should be aware of the consequences and should be informed about the importance of eating a healthy diet.

The analysis of this survey, it is clear that people prefer natural foods to organic ones. Although organic food is popular in today's market, its benefits are still unknown. Even though we love organic foods, we fail to motivate ourselves to consume them which may be due to availability or laziness to buy them. The increased number of rare foods is due to the number of overweight people. To get a good harvest in a short time we became accustomed to using an excessive amount of pesticides, fungicides that eventually led to the development of inanimate farming. At the same time nutrition is not limited to organic, inanimate, or well-cooked and all. It also depends on how we eat the food. Recent advances in technology have made it possible for people to spend less time on basic needs. It is a well-known fact that our brain takes about 20 minutes to send signals to the fullest. Rapid and frequently eating habits results in high-calorie diet. While we eat fast most of us have never completely chewed food, instead we swallow it leading to improper digestion that affects the supply of food in the body.

From the respondents, it is clear that eating habits are not followed by many and that this is leading to a shortage of nutritious food. Proper nutrition at the right time is important to our health. While it is a well-known fact, laziness and unsustainable work were among the reasons given by respondents.

The racist group in the 21st century has lost sight of the ancient fact that food is the only cure for all diseases. The reason for this may be due to concerns arising from the feelings that arise in dealing with unpleasant comments about the human body and social problems. To rectify this, few had agreed to give up their dinner. Also, the vicenarian skipped his sleep at night

due to work pressures and started his day by compensating them for their brunch.

From the responses we understand that most respondents are aware that malnutrition leads to disease. Our immune system needs a sufficient amount of nutrients to fight off foreign matter and that is a major reason to eat nutritious food for our well-being. There are many genetic diseases. Night blindness due to vitamin "A" deficiency, marasmus and kwashiorkor due to protein deficiency. There are many genetic diseases. [3, 12] detailed review of diseases due to malnutrition. But people only know the serious diseases of deficiency. Our body needs macro and micronutrients to produce energy. [33] The increase or decrease in the number of micronutrients also affects the body's metabolism [34]. Malnutrition is the cause of a depressive immune system [35]. Malnutrition also causes fewer skin disorders [27]

Although many agree that avoiding junk food will improve the immune system to a large extent that people refuse to do because of hunger and cravings. In a recent study, although people tried to stop eating snacks, appetite increased when they tried to stop eating [35]. Canned and processed foods are highly addictive and high in caloric. It causes digestive problems leading to constipation. The various harmful effects of malnutrition are described in [5, 3]. An unhealthy diet can cause anxiety, depression greatly affects the body's metabolism and ultimately suppresses the immune system [18] From the chart above, it is evident that people held to the same beliefs. The fear of the immune system raised among the people made them realize the importance of a healthy diet. It is still a difficult task to control their children. While there are major injustices in eating junk food in stables, commercial hotels, and prioritization of junk food has increased in price these days. When we examine the cause so we know that people have a very busy schedule and feel they are not working hard to cook, moreover junk food is easily available in a relatively short time compared to keeping

the percentage increased. By observing people, we also know that most night shift workers take fast food to eat time and people aged 13-19 get used to junk food to kill time. The proliferation of those windows and hotels has made people reluctant to cook. Fig.1 shows that midnight cravings are comparatively higher in women than men. The results show us the estimated readings of the fast food market for the year 2027 which is causing shock to the readers. A possible way to avoid such difficulties would be to encourage healthy eating at home and to develop a habit of eating fruit regularly.

Although respondents try to avoid foreign food, circumstances often do not allow them to follow. Food has always been the best remedy for all health problems but nowadays food has become a cause of disease. Nutrition and nutrition are not only for athletes or bodybuilders but also for the general public. It plays a major role in the development of the newborn to the adult age that

everyone should have. In the old days, one who provided food for the hungry was greatly commended. This situation is due to the overuse of chemicals to increase yields. The various effects of chemical fertilizers are described in detail in [24, 19, 23].

Respondents were asked about their knowledge of the nutrients they eat in their recipe. The amount of all the vitamins, proteins, minerals, carbohydrates, was unequal in their diet. Also, the percentage of all meals together in their regular diet was very low. This leads to malnutrition and leads to lower immunity. Fig.2 depicts the most frequent illness the respondents face. When inquired about food the respondents have when they are depressed or when they have a headache or when they feel anxious, the answer was obvious, that most respondents prefer hot drinks such as coffee and tea and few prefer chocolates. Chocolate and hot drinks can be taken but not often. We see that many take fresh juices

Table 1. Observed Frequencies

Category	Male	Female	Row total
Eating healthy foods	24	46	70
Dieting	5	7p	12
Hitting gym	1	3	4
Column total	30	56	86

Table 2. Expected Frequencies

Category	Male	Female	Row total
Eating healthy foods	24.41860465	45.58139535	70
Dieting	4.186046512	7.813953488	12
Hitting gym	1.395348837	2.604651163	4
Column total	30	56	86

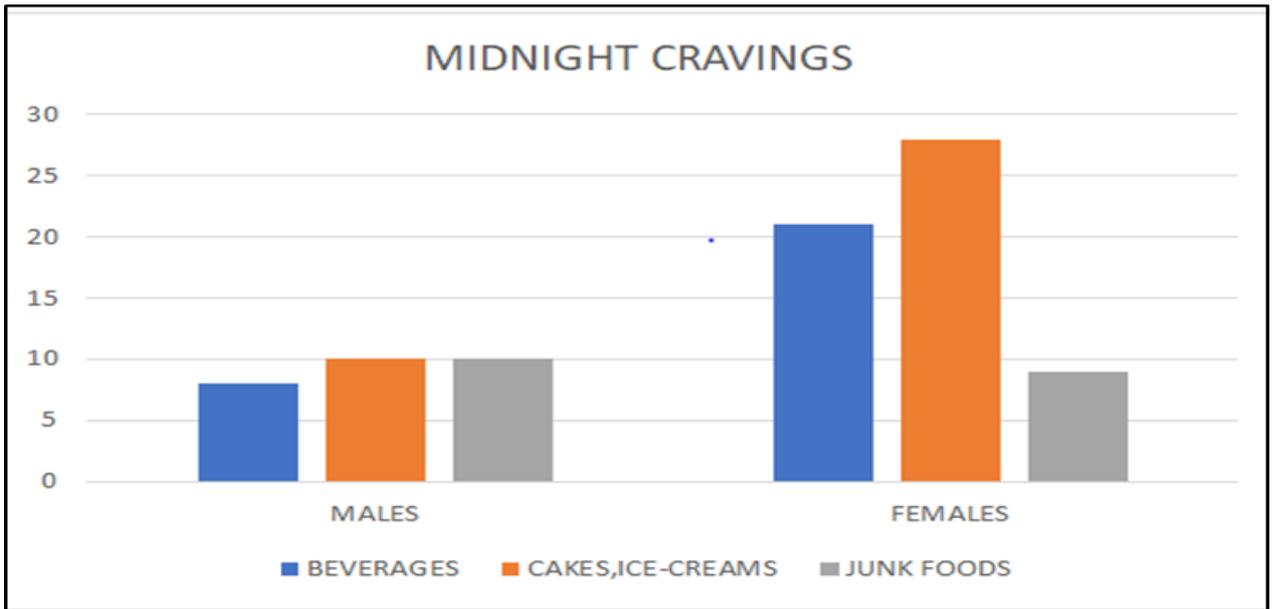


Figure 1. Midnight Cravings among men and women

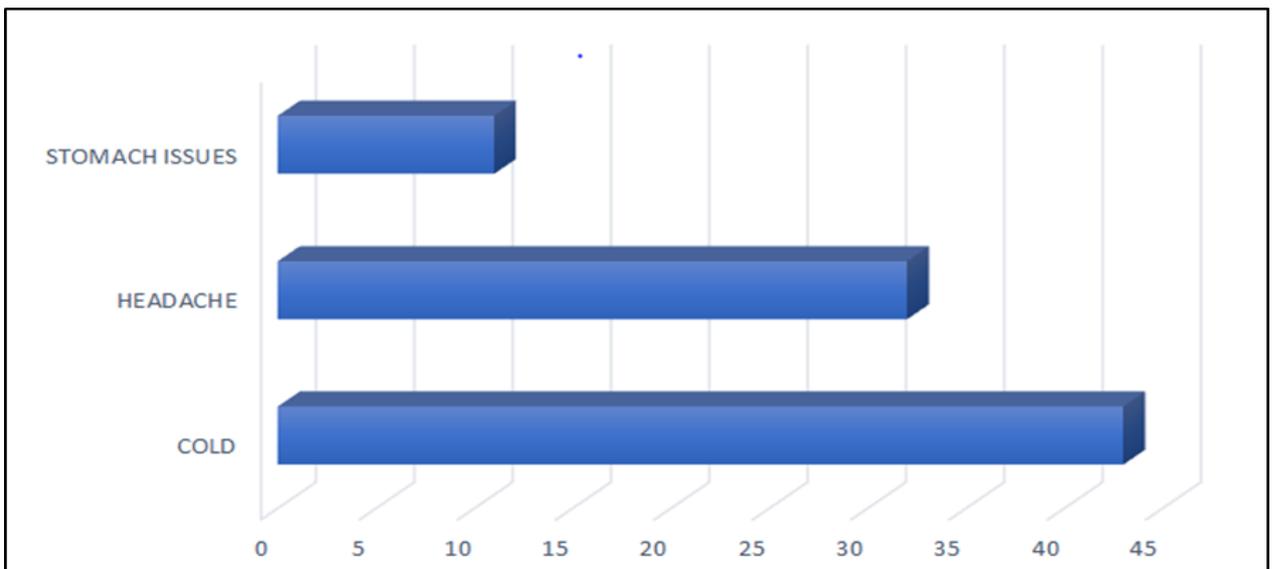


Figure 2. More Frequent Complaints among the respondents

when they feel sick. Juices are not only made for patients. Our body needs the right fluid to produce energy. In addition, many have accepted the fact that the epidemic made them realize the importance of good nutrition and forced them to take healthy food. We cannot expect the plague to keep us alive or to force us to eat nutritious food.

The Chi-Square Distribution and Discussion

Utilizing the survey responses, Chi-square distribution was carried out between the beliefs among men and women. Tab.1 and Tab.2 tabulates the observed frequencies and expected frequencies respectively. The outlook of the responses shows that there are no such significant differences between the gender perceptions. Many prefer consuming healthy foods is sufficient for a healthy lifestyle.

Conclusion

In this study, we collected various data that changed certain myths about the nutritional aspects. Foods are essential to provide us energy to our body and not just satisfy our taste. Respondents prefer good food but never choose organic farming because the harvesting process is slow. To change this unconventional farming system, young people need to get involved in organic farming that will make a big difference. The green transformation has been initiated by green distribution and not degradation. Many are unaware of the knowledge of calories burnt by their bodies. Many take foods for granted as part of their normal routine, disregarding the basic necessities of life. We accelerate to make our survival that makes us forgets so much that we need food to survive. Unhealthy eating habits and diseases are closely linked. We can deal fearlessly with any epidemic situations, if we engross towards nutritious food. We conclude that nutritious food and its value should be addressed to everyone around the world. This can only happen if we eat the right food at the right time. It is very important to maintain a healthy lifestyle. "Life is a treasure" to accomplish this task your body needs "nutrition".

References

1. Abiola S,Thi A.N. T, Kittirath P, (2021) Evaluation of Street Food Safety and Hygiene Practices of Food Vendors in Can Tho City of Vietnam. *Curr Res Nutr Food Sci* 9(1).
2. Amanda brain ,Donna Huang, , Lima Omari(2020) Bus stops near schools advertising junk food and sugary drinks. *Nutrients* 12(4).
3. Anmol Lamba, Veena Garg(2017)Impact of junk food on health status and physical performance of school going children (12-16 Years). *International Journal of Food science and Nutrition* 2(6):49-51.
4. Annunziata Azzurra ,Agovino Massimiliano , Mariani Angela(2019)Measuring sustainable food consumption: A case study on organic food. *Sustainable Production and consumption*.
5. Arya Geetha, Snit Mishra(2013) Effects of junk food and beverages on adolescent's health: A review article. *IOSR Journal of Nursing and Health Science*1 (6):26-32.
6. Berit M. Follong, Elena Prieto-Rodriguez, Andrew Miller, Clare E. Collins(2020) Integrating nutrition into the mathematics curriculum in Australian primary schools. *Nutritional Journal*.
7. Bettina Ewers, Jonas Salling Quist, Kristine Faerch (2020) Late-evening food intake is highly prevalent among individuals with type 2 diabetes.*Nutrition research*
8. Biswas M, Ghosh P,Dutta A(2021) Comparative analysis of Nutritional Constituents, Antioxidant and Antimicrobial activities of some common vegetable wastes,*Curr Res Nutr Food Sci*.9(1).
9. Bodil Roth, Khadija saidi, Clara niholm(2021)A carbohydrate-restricted diet for patients with irritable bowel syndrome lowers serum C-peptide, insulin, and leptin without any correlation with symptom reduction. *Nutrition Research* 23-36.
10. Brine. O ,Kerstetter, Jane E(2004) High protein diets,

- calcium economy and bone health. Topics in clinical nutrition 9(1):57-70.
11. Catharine Ross A, Patrick Stover, Emily Konopoka (2013) Nutrition research to affect food and a healthy life span. *Advances in Nutrition* 5(4):579-584.
 12. Chinaza Godswill Awuhi, Igwe S Victory, Amagwula Otuosorochi Ikechukwu, (2020) Nutritional Diseases and Nutrient Toxicities: a Systematic Review of the Diets and Nutrition for Prevention and Treatment. *International Journal of Advanced Academic Research* 9(1).
 13. Cleaver, Harry M(1972) The contradictions of Green revolution. *The American review*.
 14. Dalton, Sharron(2004) Schools and the rising rate of overweight Children. *Prevention and intervention of strategies* 19(1):34-40.
 15. Esther F, Myers,, Trostler(2017) Insights From the Diabetes in India Nutrition Guidelines Study: Adopting Innovations Using a Knowledge Transfer Model. *Topics in clinical nutrition* 32(1):69-86.
 16. Felix Septianto, Joya Kemper, Widya Paramita (2019) The role of imagery in promoting organic food. *Journal of business research* .
 17. Gyorgy Scrinis(2008) On the ideology of Nutritionism. *Gastronomica*.
 18. Ian A Myles(2014) Fast food fever: reviewing the impacts of the Western diet on immunity. *Nutrition Journal* 13:61.
 19. Karishma Baishya(2015) Impact of Agrochemicals application on soil quality degradation. *International Journal of Science Technology and Management* 4(1).
 20. Katri peuhkuri, Nora sihvola(2012) Diet promotes sleep duration and quality. *Nutrition research* 32(5):309-319.
 21. Lacey, Janet, Zeswitz(2018) *Promoting Vitamin E Awareness and Adequacy Among College Students*. *Topics in Clinical Nutrition* 33(3):227-236.
 22. Loreen Powell(2008) Factors affecting breakfast intake in children. *Topics in Clinical Nutrition* 23(2):96.
 23. Lu Zhang, Chengxi Yan, Qing Guo(2018) The impact of agricultural chemical inputs on environment: global evidence from informatics analysis and visualization. *International Journal of Low-Carbon Technologies* 13(4),338-352.
 24. Nayana Sharma and Ritu Singhvi(2017) Effects of Chemical Fertilizers and pesticides on Human health and Environment: A Review. *International Journal of Agriculture, Environment and Biotechnology* 10(6):675-679.
 25. Renee Shaw Hughner, Pierre McDonagh, Andrea Prothero (2007) Who are organic food consumers? A compilation and review of why people purchase organic food. *Journal of consumer behaviour*.
 26. Robert Abbott(1997) Food and nutrition information: a study of sources, uses, and understanding. *British Food Journal*.
 27. Rushikesh V Tikole, Reen Kulkarni, Shailaja Uppinadkudru, Nithin S A(2013) Nutritional deficiency disorders in paediatrics: An ayurvedic perspective. *International Journal of Research in Ayurveda and Pharmacy* 4(4):605-607.
 28. Shanthy A, Bowman, Steven L (2004) Effects of Fast-Food Consumption on Energy Intake and Diet Quality Among Children in a National Household Survey. *Pediatrics* .
 29. Yeonsoo Kim, Jin Young Park, In-Kyung Jun(2010) The effects of Internet addiction on the lifestyle and dietary behavior of Korean adolescents. *Nutrition Research and practice*.
 30. https://www.google.com/url?sa=i&url=https%3A%2F%2Fwww.nutritionsciencegroup.com%2F&psig=AOvVaw20aKA-7E8n6FdBJLDwSjd_&ust=1610544546378000&source=images&cd=vfe&ved=0CAMQjB1qFwoTCPiamK7Alu4CFQAAAAAdAAAAABAD

31. https://www.google.com/url?sa=i&url=https%3A%2F%2Fwww.hsph.harvard.edu%2Fnutritionsource%2Fhealthy-eating-plate%2F&psig=AOvVaw20aKA-7E8n6FdBJLDwSjd_&ust=1610544546378000&source=images&cd=vfe&ved=0CAMQjB1qFwoTCPiamK7Alu4CFQAAAAAdAAAAABAJ
32. <https://www.healthline.com/health/malnutrition>
33. <https://www.who.int/health-topics/micronutrients>
34. <https://www.sciencedirect.com/topics/medicine-and-dentistry/nutritional-deficiency>
35. <https://timesofindia.indiatimes.com/life-style/health-fitness/photo-stories/this-is-why-it-is-so-difficult-to-quit-junk-food-according-to-a-study/photostory/66822538.cms>