

A Research Review: Food System and Physical Health Challenges in the 21st Century in India

Mr. Fahad Mayuddin Sandhi

Student

Shri. V. R. Patel College of Commerce, Nagalpur, Mehsana

Gujarat

Mail ID: - fahadsindhi15@gmail.com

Mobile: 9924870802

Dr. J.K. Patel

Principal

Shri. V. R. Patel College of Commerce, Nagalpur, Mehsana

Gujarat

Mail ID: prinjkpatel@yahoo.co.in

Mobile: 9824611004



Abstract:

Innovation, technological, economical developments is era of twenty first century. These changes makes comfortable and human life and increase standard of living, but is has credited physical challenges. While taking for health it is not only absents of illness but also it includes healthy food habits, physical exercise. It include clean natural environment and healthcare services by society and government. Various disease like cancer, diabetes, heart issues are very chronic in India, large population and food system of India is responsible for that. India is agricultural nation still India is facing insufficiency food, malnutrition, anemia. Due to under nutrition there is increment in cases of obesity. Also there is rising in other lifestyle disease. Rapid urbanization, increased consumption of processed foods, sedentary lifestyles, and aggressive marketing of fast food have worsened the problem. Although India's food market and processing sector contribute to economic growth and employment, they also influence public health outcomes. Therefore, balancing economic development with nutrition-focused policies, food safety, physical activity promotion, and public awareness is essential for achieving sustainable physical well-being in modern India.

1. Introduction:

Innovation, technological, economical developments is era of twenty first century. These changes makes comfortable and human life and increase standard of living, but is has credited physical challenges. While taking for health it is not only absents of illness but also it includes healthy food habits, physical exercise. It include clean natural environment and healthcare services by society and government. Various disease like cancer, diabetes, heart issues are very chronic in India, large population and food system of India is responsible for that. India is agricultural nation still India is facing insufficiency food, malnutrition, anemia. Due to under nutrition there is increment in cases of obesity. Also there is rising in other lifestyle disease. Rapid urbanization, increased consumption of processed foods, sedentary lifestyles, and aggressive marketing of fast food have worsened the problem. Although India's food market and processing sector contribute to economic growth and employment, they also influence public health outcomes. Therefore, balancing economic development with nutrition-focused policies, food safety, physical activity promotion, and public awareness is essential for achieving sustainable physical well-being in modern India.

2. Literature Review

The Nutrition and Obesity Research Center at Harvard (2021), funded by NIH, and the Harvard Medical School Division of Nutrition organized the 22nd Harvard Nutrition and Obesity Symposium. The theme was "Global Food Systems and Sustainable Nutrition in the

21st Century, Expert talks about i) increasing obesity and non-communicable diseases like diabetes and heart disease, ii) Malnutrition and hunger in many parts of the world, and the impact of food production on climate change, iii) The need for good and healthy diets

WHO Report (2023), A significant trend in recent health literature globally is the burden of starvation., where undernutrition persists alongside rising overweight and obesity. According to WHO's reported 204 billion people were suffering from malnutrition- including both undernutrition and overnutrition — driven by uneven access to healthy diets and persistent food insecurity.

Anuradha Mascarenhas (2024), Estimated physical fitness in India, " as per the article, among 195 nations India was at 12th position in terms of physical inactivity. As per the Lancet Global Health report, 50 percent of Indians lead a physically inactive life. Out of these people, 42 percent of physically inactive people belong to the male category while 57 percent are physically inactive women. In the year 2000, 22.3 percent of physically inactive adults lived in India.. This data increased by 49.4% in the year 2022. Economics Times (2024). As per the ICMR released 17 diabetes report, 56.4% total disease is due to an unhealthy diet in India. National Institute of Nutrition said that a healthy diet and physical activity decrease the risk of corona nori hard disease and hypertension, it prevents up to 80% type 2 diabetes. More consumption of processed food.

Indian Express (2024), The Dalberg's State of Sports and Physical Activity (SAPA) report, 15.5 crore Indian does not meet WHO physical activity requirement. Among these 15.5 crore, 4.5 crore are the young population.

Support the Guardian (2026), 70% people have a higher possibility of being hospitalized or dying because of obesity. Results of a study done on more than five lakhs people show that diseases like pneumonia, COVID-19, flu, gastroenteritis, and other infections. Obesity is considered a major factor of death; 11% death take place because of infection in overweight people.

Food systems are very important in today's world. Right now, the world is facing many problems like fast changes in eating habits, increasing hunger, malnutrition, and big social inequalities. Many people do not get enough healthy food, while others eat too much unhealthy food. At the same time, food systems also give us a big opportunity. If they are improved, they can help produce healthy and safe food for everyone. They can also protect the environment and support sustainable development. In 2021, world leaders met at the UN Food Systems Summit to discuss how to improve and transform global food systems in a better and more organized way.

This article summarizes the main ideas from that symposium. It explains how better food systems can help reduce malnutrition, prevent non-communicable diseases like diabetes and heart disease, fight climate change, and reduce economic and social inequalities.

3. Objectives of the Study

- To understand major physical health challenges in the 21st century
- To analyse food systems and their relation to physical health
- To understand India's food market and food processing sector
- To examine the health impact of packaged food, street food, and food services

4. Methodology

This study was done based on secondary data, Collection of data was based on second data, Research paper, articles, WHO report and UN report

5. 21st century and physical health as a concept

In the 21st century, physical health does not only mean that a person is free from disease. It means much more than that. Today, physical health includes how well our body works, our daily habits like eating and exercise, the environment we live in, and whether we have access to good healthcare services.

Physical health is define by not only person is free from all disease but definition of health very wide now a days, is includes exercise, workout and the natural environment where we live.

According to the World Health Organization (WHO), health is “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity” (WHO, 1948).

WHO define this definition which is realistic even today. However, over time, people have understood that health is affected by many modern challenges like pollution, unhealthy lifestyles, stress, and lack of medical facilities. So now, physical health is seen in a broader and more complete way.

5.1 Concept of physical health: Traditional Vs. Modern Approach

In earlier times, the traditional concept of physical health mainly meant being free from illness. If a person did not have any disease and their body organs were working properly, they were considered healthy. Physical fitness was also important, but the focus was on diagnosing and treating diseases. The medical model mostly concentrates on curing illness rather than preventing it.

However, in the 21st century, the concept of physical health has changed and become broader. Today, physical health includes having balanced nutrition, doing regular physical

activity, maintaining a healthy body weight, and preventing chronic diseases like diabetes and heart problems. It also includes access to good healthcare services, living in a safe and clean environment, and having healthy and sustainable food systems. Modern public health research now focuses more on prevention, healthy lifestyle changes, and building sustainable health systems rather than only treating diseases.

5.2 Nutrition, Food Systems, Physical Activity, and Inactive Lifestyle

Century” shows that industrialized food products, increased consumption of ultra-processed foods, and unregulated food distribution are the major causes of obesity and undernutrition, mostly worldwide. According to the Food and Agriculture Organization (FAO, 2023), more than 240 crore people don't have access to a healthy diet, indicating severe inequalities in access to nutritious food. Obesity and malnutrition are two extremes which show that physical health is not all about medical facilities and medicines; it has related to food quality, safety, and the way to cropping. Subsequently, development in technology has increased facilities in today's housekeeping work and at job place. It has changed lifestyles of people which has been increased screen time, these are main reasons for obesity.

6. Food systems and their relation to physical health In India

To understand food systems in India and their connection with physical health, we must study how food is produced, distributed, and consumed.

To know food system and physical health there is a need to understand pattern of production, Consumption and distribution. These patterns directly affect people's nutrition and disease levels. Over the years, India has increased its food grain production, which is a positive development. However, many people still do not have equal access to healthy and nutritious food. At the same time, the consumption of processed and junk food has increased, which is negatively affecting health.

According to the Food and Agriculture Organization (FAO, 2023), many people in developing countries, including India, cannot afford a healthy and balanced diet. According to the Ministry of Health and Family Welfare through NFHS-5 (2019-21), Today even it is noted that children and women are suffering from issues like short height, anemia etc., this means malnutrition is still a serious issue. On the other hand, overweight and obesity are also increasing, especially in cities. This situation, where both undernutrition and overnutrition exist at the same time, is called the “Higher level of malnutrition”.

7. Processed food and food market in India

7.1 Food processing sector in India

The food processing sector makes up about 32% of the total food market in India. It contributes nearly 8.8% to manufacturing GVA, 8.39% to agriculture, and around 13% to India's total exports. It also provides millions of jobs in both organized and unorganized sectors. Government support through programs like 'Make in India', Production-Linked Incentive (PLI) schemes, food parks, and cold storage infrastructure has helped the sector grow. These policies aim to reduce food wastage, increase value addition, and promote exports.

7.2 Food market in India

Indian market is fast moving and biggest food market in whole world. This growth is mainly due to rising incomes, urbanisation, and changing food habits. In 2024, the food processing industry reached about ₹30,49,800 crore (US\$ 354.5 billion) and is expected to grow to ₹45,84,415 crore (US\$ 535 billion) by FY26. This shows strong demand inside the country and good opportunities for investment. The fast growth of this sector plays an important role in India's economy.

7.3 India as a global agricultural leader

India is a global agricultural leader and is the largest producer of milk and spices, and a major producer of rice, wheat, fruits, and vegetables. Food industry is busting in India with support of agriculture and husbandry. Processed food like Paneer, cheese, fruit juice or ready to eat and cook products. Consumer incensed knowledge for the food so they prefer more organic food. Due to this market of organic food has been rises. This market boosted economic growth of rural area, farmers development, income, exports, employment opportunities.

8. Major Physical Health Challenges in the 21st Century in India

8.1 Obesity and Lifestyle Diseases

In 21st century India is facing dual issues: on one hand people are suffering from malnutrition and other hand obesity, now there is two different problems need to be solved. According to the Ministry of Health and Family Welfare (NFHS-5, 2019–21 In India overweight and obesity increased in last few years.

There are many reasons for this change. Urbanization, sitting for long hours, eating fast food, high sugar intake, less physical activity, and more screen time are major causes. Long working hours and stress also affect health. Health issue related to BP, diabetes, heart attack are very danger for health. The World Health Organization (WHO) reports that India has one of the highest numbers of people suffering from diabetes in the world.

These lifestyle diseases do not only harm individuals but also affect the country. They increase healthcare costs and reduce work productivity. Therefore, obesity and lifestyle diseases are major physical health challenges in modern India. To solve this problem, people need awareness, a balanced diet, regular exercise, and healthy daily habits.

8.2 Food Safety and Hygiene Issues

Food safety and cleanliness are big challenges in India's food system. When food or water is contaminated, it can cause diseases like diarrhoea, typhoid, cholera, and food poisoning. Poor sanitation, wrong storage methods, lack of cold storage facilities, and unhygienic street food practices increase health risks for people.

In India organisation called "The Food Safety and Standards Authority of India" (FSSAI) made policies and rules for food safety. However, there are still problems in proper implementation, especially in rural areas and the informal sector. According to the World Health Organization (WHO), unsafe food causes millions of illnesses every year around the world, and children are more at risk.

Other problems like pesticide residues, food adulteration, and too many preservatives can also harm health in the long term. Climate change and rising temperatures make food spoil faster and increase contamination risks. Therefore, Food hygiene needs to be enhanced, safety regulations need to be improved, awareness raised, and safe handling ensured for the good of everyone.

9. India's Food Market and Physical Health

India's food market is one of the largest in the world. India food market play significant roll in public health and busting factor for Indian economic India is a major producer of milk, rice,, wheat, fruits, and vegetables, which shows that the country has strong agricultural capacity.

Indian food processing industry is growing fast in last few years as per India Brand Equity Foundation (IBEF, 2024). It contributes significantly to manufacturing production and exports. This growth has improved food availability in the country and created many job opportunities.

However, the rapid increase in processed and packaged foods has also created serious health concerns. Eating too much processed food can lead to health problems like obesity and lifestyle diseases. Therefore, while the food market is growing, it is also important to focus on healthy eating habits.

One major issue is the change in eating patterns. The traditional Indian diet, which included millets, pulses, and vegetables, is now being replaced by high-calorie, high-sugar, and high-fat

processed foods, especially in urban areas. Unhealthy food or diet gives invitation to various non-communicable diseases (NCDs) like; hypertension, depression, cancer, heart problems and type one and two diabetes this is as per records of WHO (2023), India is now facing a rapid increase in cases of obesity and diabetes, especially among young people.

At the same time, India is still facing serious problems of undernutrition and a lack of important vitamins and minerals. According to the Ministry of Health and Family Welfare, through NFHS-5 (2019–21), children and women are suffering from issue like short height, anemia etc.

This clearly shows that India is facing a “double burden of malnutrition,” where both undernutrition and obesity exist at the same time. While the food industry is expanding, there’s no guarantee that healthy and nutritional foods are available to everyone.

Food safety and quality is a big concern in India, for food standardisation FSSAI (Food Safety and Standards Authority of India) has given guidelines and rules, but unethical practices in food affects health of people. Poor-quality food can cause infections and also lead to serious long-term health problems.

One major issue is that India’s food market often focuses more on economic growth and customer demand than on nutrition. Fast food and sugary drinks are heavily advertised, especially to children and young people, which increases health risks like obesity and diabetes. However, the government has taken some positive steps, such as promoting millets, encouraging balanced diets, and supporting food fortification programs.

10. Findings of the Study

- Food market supports economic growth and employment.
- An increase in processed and packaged foods causes health risks.
- The traditional diet replaced by high-calorie processed food.
- An unhealthy diet increases NCDs like diabetes and heart disease.
- Undernutrition and micronutrient deficiency still exist.
- Healthy food is not equally affordable for all income groups.
- The marketing of fast food influences children and youth.
- Government promoting millets, balanced diets, and food fortification.

11. Recommendation

- Food markets and economic development with profitability need to develop but also nutritional quality need to taken care by government.

- Government should take care of level of sugar, fat and control various comical use in packed or processed foods.
- People should be encouraged to use more traditional food, vegetable and fruits they need to reduce high calorie food.
- Strong awareness campaigns should be conducted for health food habits .
- Government should put more emphasis on nutrition programs to reduce under-nutrition and micro-nutrient deficiencies for children and women.
- The government should increase subsidies and public distribution systems for healthy and nutritious food.
- Strict rules should be made to control on unethical marketing of fast food which is more focus on children and youth.
- Millet and balanced diets should be promoted by government.

12. Conclusion

The 21st century is truly the century of inventions and innovation. With new technology, machines, and modern facilities, life has become more comfortable. However, this comfort has also created many physical and mental health problems. Currently, in addition to infectious diseases, there are problems related to contemporary lifestyles, poor nutrition, and lack of physical exercise. The WHO highlights that non-communicable diseases such as heart diseases, diabetes, cancer, and chronic respiratory diseases are included. About 74% of deaths worldwide, causing around 4.1 crore deaths every year. The main reasons behind these diseases are unhealthy eating habits, physical inactivity, smoking, alcohol use, and obesity. This clearly shows that modern lifestyle patterns are a major cause of poor health.

India is a special and important example in this situation and it has It has most diverse food systems in the world. Agriculture contributes nearly 18% to India's GDP and provides employment to a large population. So, food production is not only an economic activity but is also closely connected to national health and nutrition. Although India has successfully increased food production and strengthened its food processing sector, serious health challenges still remain.

Studies show that India is facing a "double burden of malnutrition." On one side, undernutrition, stunting, anemia, and micronutrient deficiencies continue to affect children and women. On the other side, obesity and lifestyle diseases are increasing rapidly, especially in urban areas. The traditional Indian diet, which is rich in millets, pulses, and vegetables, is slowly being replaced by high-calorie, high-sugar, and processed foods. Increased screen time,

sedentary jobs, stress, and reduced physical activity have made the situation worse. Reports show that many Indians do not meet the required levels of physical activity, which increases the risk of diabetes and heart disease.

At the same time, India's food market is expanding rapidly and contributing to economic growth, exports, and employment. However, this growth has also led to higher consumption of packaged and processed foods. The marketing of fast food and sugary drinks, especially among children and youth, has increased health risks. Food safety issues like contamination, adulteration, and poor hygiene also pose serious threats to public health.

In conclusion, India is at a critical stage where public health and economic developments must go hand in hand. A strong food system should not focus only on production and profit, but also on nutrition and safety. A proper diet, cultural dietary habits, exercise, food safety guidelines, and availability of healthy food choices are all vital aspects. Only by balancing innovation, economic growth, and health-focused policies can India achieve sustainable physical well-being for its people in the 21st century.

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