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Perspective review on Nutritional Therapies of Fruits for Reducing Burden of Chronic Diseases in Urban Areas

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Abstract

Horticultural crops are rich sources of dietary fibers and micronutrients and are associated with good health improvement in gastrointestinal health, reduced level of cancer, cardiovascular diseases, diabetes, anemia and other chronic diseases. Vegetables and fruit are extremely important in human nutrition as sources of nutrients and non-nutritive food constituents as well as for the reduction in disease risks. While their importance as sources of nutrients and non-nutritive food constituents is generally accepted, there are still uncertainties regarding their relevance for the prevention of diseases. For this reason, it has to be determined first, for which diseases studies have detected an association between the consumption of vegetables and fruit and the risk of disease, and subsequently, how this association has to be judged. This information provides an important basis to judge the preventive potential of a diet rich in vegetables and fruit. A healthy diet should be consumed throughout the life course as it aids in preventing a number of noncommunicable diseases (NCDs) and illnesses, as well as malnutrition in all of its manifestations. However, there has been a change in dietary patterns as a result of increased manufacturing of processed foods, rising urbanization, and changing lifestyles. Nowadays, individuals eat more meals that are heavy in calories, fats, free sugars, and salt and many people eat insufficient amounts of fruit, vegetables, and other dietary fiber-rich foods like whole grains. Due to this people are suffering from many chronic diseases. Fruits offer a variety of health advantages that lower risk for conditions like diabetes, high blood pressure, cancer, cancerous tumors and heat stroke. This review paper focuses on how to combat these chronic diseases by natural method like eating more fruits that have hidden healing power. We also examined the nutritional and health benefits of fruits that you can easily find in the market.

Keywords: Noncommunicable diseases, communicable diseases, nutrition, diabetes, urbanization, cardiovascular diseases, cancer

Introduction

There are many big health challenges for the people of India and worldwide i.e., Urbanization, A changing climate, Globalization, Mental health, Physical activity and Nutrition. Among them urbanization is one of the major issues that has a huge impact on health of people. Rapid urbanization has significant repercussions on the health of people. There are many factors of urbanization that cause the health risk to people of urban areas e.g. population, the natural and built environment, social and economic development and food security. In urban areas people are facing various potential health challenges in the aspect of chronic disease like poor housing, overpopulation, air pollution, inadequate water supply, poor sanitation and solid waste disposal etc.

Some of the diseases that are faced by urban people are as follows

Communicable diseases: Also known as Infectious diseases. For ex. HIV/AIDS, Tuberculosis, Pneumonia, Covid, Dengue and Diarrhea

Non-communicable diseases: Heart disease, Stroke, Asthma, Cancer, Diabetes and COPD (chronic obstructive pulmonary disease).

People frequently look for specialized meals or vitamin supplements that are said to strengthen immunity during flu season or time of illness.

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Citrus fruits, chicken soup, and tea with honey are a few examples of common foods that include vitamin C. The best way to prepare the body to fight with infection and disease is to consume a balanced diet rich in a variety of vitamins and minerals, together with healthy lifestyle choices like getting enough sleep, exercising regularly and reducing stress.

A healthy immune system can be harmed by diets that are deficient in diversity and nutrients. It's also thought that diet heavy in sugar, fat and salt but light on fruits and vegetables can alter the balance of good intestinal bacteria, leading to persistent gut inflammation and the corresponding suppression of immunity.

People who have HIV, TB, Malaria, and other infectious diseases are more likely to live longer and experience lower morbidity and mortality when they follow a healthy diet. People with these disorders can improve their quality of life, maximize the effects of their medications, and better control their symptoms by following a nutritious diet.

According to survey there is a close link between diet and prevention of diseases. The people who consume more fruits

and vegetables have a lower risk to get infected by any type of chronic diseases. Fruits are known as natural fighters as they have hidden healing power from various chronic diseases. A diet rich in fruits can lower B.P., reduce the risk of heart disease and stroke, prevent some type of cancer, lower risk of diabetes and digestive problems. The person who does not take these health boosting fruits in his diet, is more susceptible to get infected by diseases.

Fruits are the source of many essential nutrients like vitamin K and C, dietary fibers, minerals and folate (folic acid). These are low in fat, Sodium and calories. Fruits also contain health boosting antioxidants and Flavonoids. So, we can say that including more fruits in our diet is an excellent way to have sound health and also avoid the risk of diseases.

Fruits contain a variety of health advantages that assist shield against conditions like diabetes, high blood pressure, heat stroke and cancer. They successfully combat skin conditions and encourage strong, wholesome hair development. To reap the greatest health advantages from fruits, it is usually advised to eat fresh and ripe.

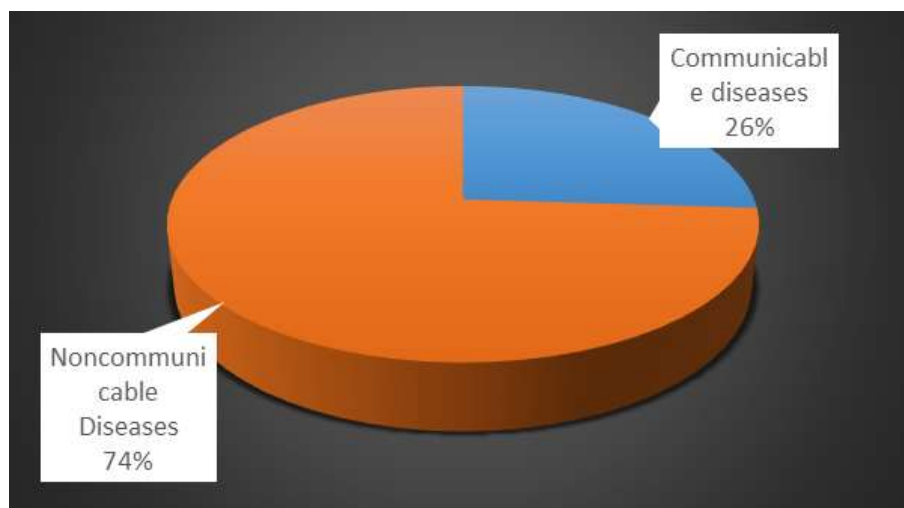


Fig 1: Global death percentage

Current Health Issues Prevalent in India

Although there are a lot of benefits in Urban living like, we find many facilities and opportunities of jobs and services in urban areas but simultaneously urban living also introduces new health risk and new hazards in human beings. In urban areas most of the health risks are faced by people who are living in slum areas or in poor hygienic conditions. These people also don't get enough nutrition due to lack of money. WHO estimates 74% global mortality due to NCD's (Noncommunicable diseases) which are related to urban living. The health risk related to urban environment are physical inactivity and obesity, Cardiovascular and Pulmonary diseases, ischemic heart diseases, cancer and Asthma. These occur due to air pollution generated by transport and biomass energy use. Outdoor air pollution is alone responsible for millions of deaths annually, mainly

due to NCD's. In India a total of 50 lakh deaths were estimated from diseases like cancer, diabetes and heart problems in the year 2016. This is a matter of concern that the burden of NCD's is rapidly increasing because of changing lifestyle and factors like pollution, intake of Tobacco, Unhealthy diet, Physical inactivity and harmful use of alcohols. Major metabolic risk factors are obesity, raised B.P., blood glucose and blood cholesterol levels. Cardiovascular diseases (coronary heart disease, Stroke and Hypertension) contribute to 44% of all NCD's deaths followed by Cancer (23%) chronic respiratory disease (10%) and Diabetes (5%). In India cancer, diabetes and heart diseases alone accounts for 55% of the premature mortality in the age group of 30-69 years (WHO report 2022).

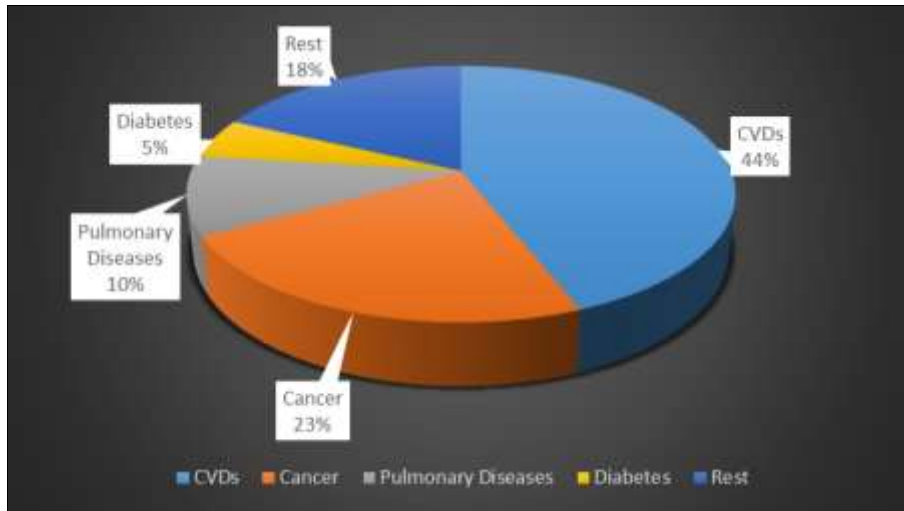
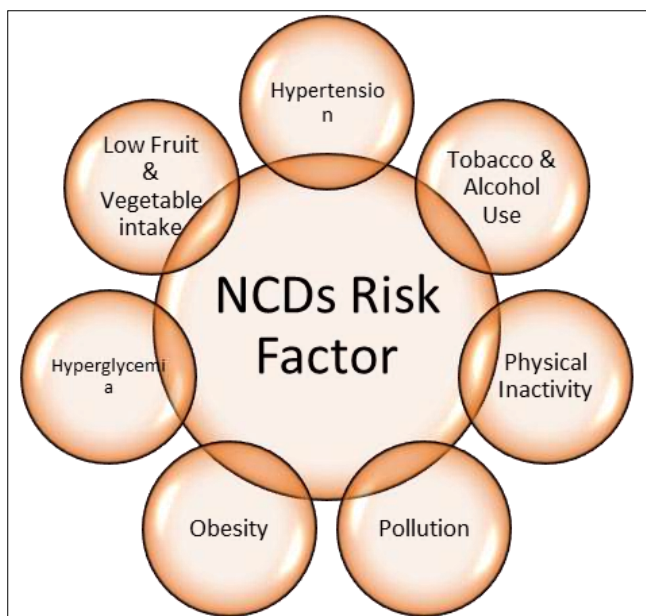


Fig 2: Global death percentage by NCDs



Communicable diseases also related with unhealthy urban environment. These are Airborne diseases such as tuberculosis, Waterborne and Vector borne diseases such as Dengue, Malaria, Encephalitis, Kala-Azar due to poor waste management and unhygienic condition etc. It is a very big challenge to face infectious diseases. Every year huge number of Indians expire due to infectious diseases. T.B. is one of the most widespread infectious and communicable disease among Indians. Around 2.79 million individuals were diagnosed with TB in India in 2016. Concerns about resistant strains of TB are also growing in the country i.e., Multi drug resistant) remains a public health crisis and a health securely threat. Insect vector borne diseases are also a huge burden on the individual living in unhygienic condition. India was found to have the highest burden of malaria. Reason of this is unsanitary condition that creates

breeding grounds for mosquitoes. Government has launched Clean India mission to carve out the malaria. The Asia Pacific Leaders Malaria Alliance (APLMA) claimed that India as well as the rest of the South East Asia region could eliminate malaria by 2030. Dengue fever is the world’s most rapidly spreading mosquito borne viral disease. Similarly, AIDS, Hepatitis, Measles, Zika virus, Pneumonia TB (MDR-TB and Nipah virus are also a worrisome prospect that are huge threat to life of People worldwide. Though India has shown considerable progress towards disease reduction for many years but the progress towards disease reduction is slow. A lack of financial investment by government also hurt the success of Indian medical system. According to a survey (National Institute of Nutrition), 2017 in urban areas people become unhealthy due to eating unhealthy food and doing less exercise. Inactivity and unhealthy diet are also seen in 10-12 yrs. kids. In this age more emphasis should be given to sports, physical activity and increased intake of fruits and vegetables and that is not seen in the children in urban areas. This is the reason of spreading the diseases hypertension, obesity and Diabetes in urban community.

So, there is a need to aware the people about the hazards of junk processed food and educate them about the healthy lifestyle and eating habits.

Nutritional and Health benefits of Fruits

- 1. Grapes:** Purple/White- The varying colors of grapes bring a spectrum of antioxidants protective power to these versatile fruits. The component of grape juice is reported to reduce the risk of cancer, stroke, heart disease and memory loss. Purple grapes contain Resveratrol, the potent cancer fighting antioxidant found in red wine and other grape products and making headlines around the world. Grape juice provides the benefits of:



Fig 3: Purple grapes contain Resveratrol

Table 1: Purple grapes contain Resveratrol

Anti-aging	Anti-inflammatory
Arterial flexibility	Cardiovascular health
Inhibiting prostate cancer	Anti-bacterial/viral
Antioxidant	Brain, Skin, eye health
Gastric health	

2. **Prunes:** Prunes are dried plums, rich in minerals and phenols, have an extremely high ORAC value. The drying process actually increases antioxidant powers by more than six times: USDA researchers believe that

people of all ages can prevent and treat diseases of aging by simply adding prunes to their diets. Prunes are especially appropriate for:



Fig 4: Prunes are dried plums

Table 1: Prunes are dried plums

▪ Fighting infections	▪ Boosting Bone density
▪ Cardiovascular diseases	▪ Reducing cholesterol
▪ Preventing memory loss and Alzheimer' s	▪ Diabetes
▪ Bowel cleansing, regularity	▪ Liver cleansing
▪ Reducing risk of estrogen dependent cancer	▪ Diverticular disease

3. Oranges: The Oranges are the richest source of natural Vitamin C, which is also vital for the proper functioning of a healthy immune system, is good for preventing colds and preventing recurrent ear infections. Orange is known to have several health benefits and is among the most popular fruits around the world. Anti-oxidants in oranges help in protecting skin from free radical damage known to cause signs of

aging. Fibersn in oranges help by keeping blood sugar levels under control. Oranges are safe for consumption and only in rare cases, people may have allergies after consuming this fruit. For people suffering from heartburn, consuming this citric fruit might make things worsen due to the presence of citric acid and ascorbic acid (vitamin C).



▪ High in Vitamin C	▪ Lower cholesterol
▪ Healthy immune system	▪ Control blood sugar level
▪ Prevent skin damage	▪ Lower the risk of cancer
▪ Keeps blood pressure under check	▪ Alkalizes the body
▪ Good eye health	▪ Help in Constipation

4. Kiwi: Kiwi fruit contains abundant phytonutrient plus numerous vitamins and minerals. It has gained fame as a delicious blood thinning alternative to aspirin for protecting cardiovascular health. Children eating Kiwi

have found to be less susceptible to respiratory related health problems including wheezing, shortness of breath and night coughing. Kiwi is commonly used for:



▪ Controlling cholesterol	▪ Reducing triglycerides in the blood
▪ Binding/Removing colon toxins	▪ Preventing prostate/colon cancer
▪ Blood sugar control	▪ Protecting DNA from free radicals
▪ Inhibiting skin cancer	▪ Treating and preventing age related Macular degeneration

5. **Apple:** Apples are one of the most popular fruits for good reason. They are an exceptionally healthy fruit with many research-backed benefits. what’ s more, the same serving provides 2– 4% of the RDI for manganese, copper, and the vitamins A, E, B1, B2, and

B6. Apples are also a rich source of polyphenols. Apples are a good source of fiber and vitamin C. They also contain polyphenols, which may have numerous health benefits.



▪ Apples are nutritious	▪ Help prevent Cancer
▪ Good for weight loss	▪ Help fight Asthma
▪ Good for your heart	▪ Good for Bone health
▪ Linked to lower risk of diabetes	▪ Protect against stomach injury from NSAIDs (nonsteroidal anti-inflammatory drugs)
▪ They may Have Prebiotic effects and promote good gut bacteria	▪ Protect your brain from Reactive oxygen species
▪ High blood pressure	▪ Damaged DNA
▪ Vision problem	

6. Blueberries: Blueberries are an antioxidant powerhouse, responsible for keeping us young, healthy

and smart. Medicinal folklore tells us Blueberries have a long history of use for:



▪ Antiaging	▪ Eyestrain
▪ Diabetes	▪ Memory enhancement
▪ Macular degeneration	▪ Blood vessel support
▪ Fighting cancer, especially cervical/breast	▪ Indigestion
▪ Urinary tract infection	▪ Cardiovascular protection
▪ Lowering bad cholesterol	▪ Appetite enhancement
▪ Treating cough	

7. Pomegranate: Pomegranate juice contains more antioxidants than even red wine, green tea, blueberry juice or orange juice. It has been shown to be highly

effective in clearing plaque from inner arterial walls. It is used medicinally for:



▪ Preventing heart attacks, strokes	▪ Preventing and treating cancer
▪ Combating diabetes	▪ Blood pressure disorder
▪ Intestinal problems of all type	▪ Preventing blood clotting
▪ Fighting bacterial and fungal infections	▪ Eliminating parasites
▪ Cholesterol Problems	

8. Papaya: The papaya is an incredibly healthy tropical fruit. It is loaded with antioxidants that can reduce inflammation, fight disease and help keep you looking young. The papaya is a tropical fruit high in Lycopene,

Vitamin C and A, as well as fiber and healthy plant compounds. It also contains an enzyme called papain, used to tenderize meat. Papaya has healing & restorative effects for:



<ul style="list-style-type: none"> • Improve digestion • Protect against skin damage from sun • Reduce the sign of aging like wrinkles of sun • Reduce the risk of Alzheimer’ s disease • Fighting inflammation • Remedy for constipation and other symptoms of irritable bowel syndrome(IBS) 	<ul style="list-style-type: none"> • Powerful antioxidant effect • Diabetes control • Protect against certain type of cancer • Lowering blood pressure • Protect the Eye & Heart • Its seeds and other part have also been used to treat ulcers.
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9. Lychee: The Lychee is native to the warmer forest of Southern China & probably Vietnam. At 72mg of Vitamin C per 100 gms of fresh, lychees are a very good source for the essential Vitamin as well as

Potassium and other nutrients. It is a good source of Fiber too. Consuming lychee each day may help reduce the chances of



<ul style="list-style-type: none"> ▪ Cancer ▪ Boost the immune system ▪ Improve circulation 	<ul style="list-style-type: none"> ▪ Lower blood pressure ▪ Build strong bones ▪ Optimize metabolic activities
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10. Nashi Pear: Nashi pear is a good source of dietary fibers and they are also very high in potassium and other essential minerals. They contain nearly 10% of

the USRDA for Vitamin C and a high concentration of Folates, which makes the Vitamin B complex group. These Vitamins are essential for:



▪ Metabolic activities	▪ Blood cell production
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11. Cranberries: Cranberries are rich in phytonutrients and Proanthocyanidins (PACs). It is found to prevent the adhesion of certain bacteria with Urinary Tract Infections to the urinary tract walls. These anti adhesion

properties are also thought to inhibit the bacteria associated with gum disease & stomach ulcers. Historically Cranberries have been used for:



▪ Blood disorder	▪ Indigestion
▪ Antibiotics	▪ Prostatitis
▪ Urinary tract health	▪ Gall bladder and Liver disorder
▪ Anorexia	▪ Supporting gum health
▪ Protecting against prostate and Urinary tract cancer	

12. Cherry: It is a powerful antioxidant, rich in Vitamins and minerals. It has been reported to have strong anti-fungal & cholesterol lowering capabilities. It has also

been shown to fight cellular aging, to help with hydration of skin & to promote healthy capillary function. People have long used cherry for us:



▪ Treating fever & Dysentery	▪ Diabetes
▪ Rheumatism	▪ Healthy heart function
▪ Inflammation	▪ Astringent
▪ Healing wound	▪ Diuretic
▪ Tuberculosis	▪ Liver, Renal system stimulant
▪ Nutritive aid for anemia	▪ Liver problems

13. Pears: Pears are packed with flavor, fiber, Potassium, Polyphenols, Vitamin C & Copper. Levulose, the

sweetest of all known natural sugars is more prevalent in pears than any other fruit. Pears have been linked to:



▪ Antioxidant	▪ Tissue repair
▪ Colon cleansing	▪ Anti inflammatory
▪ Anti infection	▪ Healing wound
▪ Bowel regularity	▪ Aiding metabolism
▪ Protecting vision	▪ Lowering cholesterol
▪ Maintaining heart health	▪ Increasing capillary strength
▪ Protecting cell membranes	▪ Supporting nerve transmission

14. Pine apple: Pine apple is high in Manganese that keeps your bones healthy. In addition to large amounts of Vitamin C and Manganese, pineapples add to your

daily value of Vitamin B6, Copper, Thiamin, Folate, Potassium, Magnesium, Niacin, Riboflavin, and Iron. It has been used as:



▪ Good for Digestion	▪ Prevent Arthritis
▪ Antioxidant	▪ Anti-inflammatory and Analgesic properties
▪ Reduced risk of Cancer	

15. Bananas: Bananas are the only fruit that comes not only from trees or bushes but from large plants that are giant herbs and are related to the lily and orchid family. Bananas are rich in fibers, magnesium and vitamin B6 and are particularly famous for potassium, an essential

electrolyte that help regulate blood chemistry, especially pH balance. It is proven that the Serotonin and Norepinephrine in bananas helps those who suffer from depression. Bananas have been linked to:



▪ Antioxidant	▪ Controlling blood pressure
▪ Better muscles contraction	▪ Enhance energy
▪ Satisfying sugar cravings	▪ Steadying nerves
▪ Calming Peptic ulcers	▪ Better sleep
▪ Prevent heart disease and cancer	▪ Produce collagen
▪ Relieving Diarrhea & constipation	▪ Better Carbohydrate and Protein metabolism

16. Apricot:- Apricot provides a rich assortment of antioxidants, soluble fibers, Beta-carotene, Magnesium, Iron, Phosphorus, Potassium and Vitamin C. It includes

a natural Salicylate, the major ingredient in aspirin. The nutrients in Apricot are well known for its prevention of:



▪ Cancer	▪ Prostate disease
▪ Heart disease	▪ Macular degeneration
▪ Stroke	▪ Blood pressure instability

Conclusion

Fruits are an essential part of a healthy diet as they are packed with vitamins, minerals and antioxidants that are beneficial for our overall health. They are not only delicious but also provide us energy and help in boosting our immune system. Fruits contain a variety of health advantages that work as a shield against conditions like diabetes, high blood pressure, cancer and heart stroke. They successfully combat skin conditions and encourage strong, wholesome hair development. To reap the greatest health advantages from fruits, it is usually advised to eat fresh and ripe. So, we can say that nutritious and balanced diet rich in fruits is the basis of good health, happiness, and ideal growth and development.

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