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EXPLORING THE THERAPEUTIC POTENTIAL: HERBAL NUTRACEUTICALS IN MODERN HEALTHCARE

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ABSTRACT

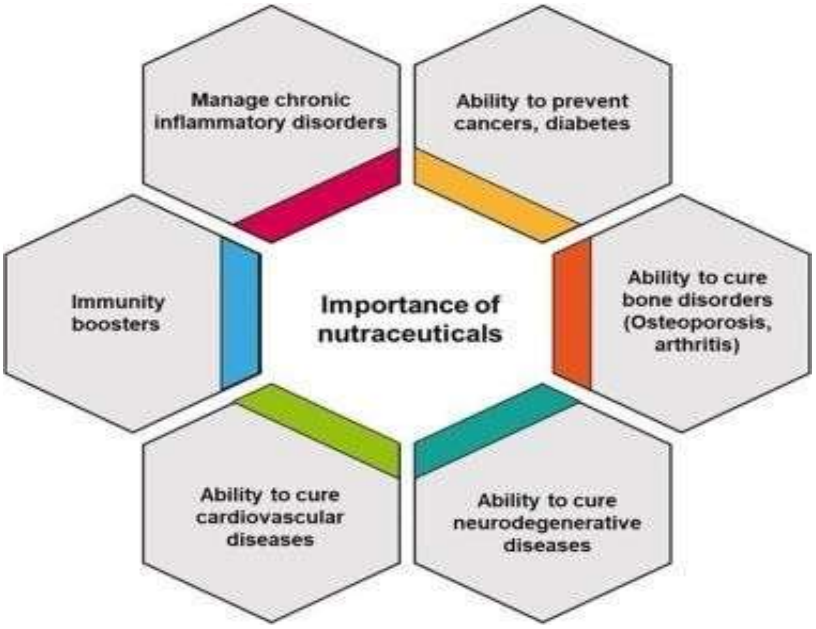
Without impairing the body's natural immune system, nutraceuticals are crucial in enhancing immunity. Nutraceuticals can be found in dietary supplements, medical diets, designer meals, active foods, and other diet plans that provide extra health benefits. Foods high in nutrientsare utilized to improve specific body processes, such as illness prevention or treatment. The previous fifty years have seen a significant shift in lifestyles due to urbanization, the speed of industry, and quick change. People's habits have been altered by these things, compelling them to eat quick, junk food. These nutraceuticals are utilized in nutritional therapy because of their chemical structures and biological functions; they contain vitamins, lipids, proteins, carbs, minerals, and other essential nutrients.

INTRODUCTION

By definition, using herbal medicines in a "traditional" way implies having a longhistory of use, and this is undoubtedly the case for many of the items marketed as "traditional herbal medicines." A significant section of the populace in many developing nations gets their medical care from traditional healers and their arsenal of medicinal herbs. Even if such conventional therapy may coexist with modern medicine herbal remedies have frequently continued to be popular throughout history because of their cultural factors. Commercially, these products are now more widely accessible, particularly in industrialized nations. These days, there are occasions when ingredientsare advertised for applications not previously considered in the conventional therapeutic systems from which they appeared.

Epidemiological and animal studies suggested that the regular consumption of fruits, vegetables and whole grains, reduces the risk of chronic diseases associated with oxidative damage. Among the phytonutrients mentioned as potentially providing the fortification are polyphenols, flavonoids, isoflavonoids, anthocyanidins, terpenoids. However the increased desire to use herbal treatment is not a reflection of the economic status of an individual from a certain region or a country. Approx 70 per cent of the population in developed countries have resorted to Complementary and Alternative Medicine (CAM) for treatment purposes. Indeed, plants and herbs have actually provided a starting point for synthesisof over 50 per cent of currently used pharmaceutical drug.

ROLE OF NUTRACEUTICALS IN VARIOUS DISEASE



i) The most prevalent type of dementia is Alzheimer's disease (AD), a neurological condition that progresses over time. This illness is incurable and ultimately fatal. Numerous research investigations have demonstrated the protective properties of various nutraceutical herbs, including Thymus vulgaris, Melissa officinalis, Zizyphus jujube, and Lavender officinalis, against Alzheimer's disease.[105,106]

ii) Carotenoids are beneficial in preventing cancer because they have antioxidant properties. Lycopene and other carotenoids have been shown to have a protective effect against cancer.[107] Vegetables and fruits high in lycopene have an anti-cancer impact via reducing oxidative stress and DNA damage.[108] Tomatoes, pink grapefruit, guava, watermelon, and papaya all contain lycopene. It has been claimed that curcumin, a polyphenol obtained from Curcuma longa, possesses anti-inflammatory, anticarcinogenic,

and antioxidative qualities.

iii) According to Caterson and Gill (2002), obesity is a global health concern that is linked to a number of major medical diseases, including angina pectoris, hypertension, osteoarthritis, respiratory disorders, cancer, renal vein thrombosis, and impaired fertility. Eating foods high in fat is one of the main causes of obesity. Nutraceuticals with possible anti-obesity qualities include capsaicin conjugated linoleic acid, Momordica charantia, Citrus aurantium, and psyllium fiber.[104,109]

Bioavailability of Nutraceuticals

The oral bioavailability of nutraceuticals (nutrients that promote health) is caused by a number of physiochemical and physiological phenomena, including food liberation from food matrix, solubilityof the component in gastrointestinal fluid, interaction with other components of the gastro-intestine, chemical degradation, and permeability of epithelial cells.

Dosage of Nutraceuticals

The protective effect of nutraceuticals against a range of diseases has been the subject of numerous in vivo and in vitro investigations, but in many of these cases, the results have not been clinically proven. For example, vitamins and natural biologics are produced by plants and can be beneficial to health, yet even pure vitamins can have toxic concentrations. A particular form of polyphenol consumed reduced the risk of cancer; however, consuming too many polyphenols can have harmful effects. According to a study, consuming too much raw garlic juice (4ml/kg) or garlic oil (100 mg/kg) might have negative health effects, including anemia, weight loss, liver, heart, and kidney toxicity. Additionally, certain anti-nutritional components found in mushrooms, such as phytates and hemagglutinins, prevent the body from absorbing protein and reduce its bioavailability. Thus, in order to reap the health benefits of any food, it is crucial to take the recommended dosage.

Current Concept And Prospects Of Herbal Nutraceuticals

The premise behind nutritional treatment and nutraceuticals states that this is accomplished by utilizing the products' effectiveness in preventing vitamin and mineral shortages, cleansing the body, and re establishing a balanced diet and digestive system. In essence, phytonutrients are plant nutrients that have specific biological properties to promote human health.[7] The estimated value ofthe global nutraceutical market is USD 117 billion (INR 5148 billion).[16] Nutraceuticals sales are expected to reach $74.7 billion in 2007 at a 9.9% annual growth rate. A recent analysis claims that the Indian market as a whole for nutraceuticals is expanding at a

rate of 21% annually. It is currently valued at INR 44 billion (€621 million), but in four years it can be worth INR 95 billion. In India, the idea of "nutraceuticals" is still relatively new. However, during the last three years, it has grown at a CAGR of 18%, substantially higher than the global average, driven by the functional food and beverage categories.[20]

Health Benefits

i) Prevent unpleasant side effects;
ii) May enhance positive health effects;
iii) May have naturally occurring dietary supplements, preventing unpleasant side effects.
iv) May enhance human health, boost nutrition, and improve medical conditions.
v) Possibly easily accessible and reasonably priced.

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