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Medicinal plants and the human needs

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ABSTRACT

Implication for health policy/practice/research/medical education
The human needs on medicinal plants are discussed. Drug therapy and drug discovery should be focused more than before on medicinal plants. Multidisciplinary team work including ethnobotanists, pharmacologists, physicians and phytochemists is essential for the fruitful outcome of medicinal plants research. Regulations are also needed to ensure efficacy, quality and safety of herbal medicines.

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Editorial

Medicinal plants have long played important roles in the treatment of diseases all over the world (1). World health organization (WHO) recently has published a strategic plan for the development and promotion of traditional medicine in 4 areas (2), including:

1- Identification of traditional medicine, presentation of a proper policy and plan.
2- Development of research and education, especially in the university level.
3- Establishment of unity and cooperation between the employees of traditional and modern medicine.
4- Development of cultivation of the needed herbs to prevent destruction of natural resources.

The release of this strategic plan shows the importance of this reliable source for the treatment and prevention of diseases.

Nowadays there is revival of interest in the consumption of herbal medicines in the form of standardized extracts, partly due to their multiple side effects, and high cost of patentable chemical drugs.

A lot of medicinal plants such as Garlic, Ginseng, Ginger, Ginkgo, Ispaghol, St John's Wort, Saw palmetto and Mucuna pruriens have gained popularity for the treatment or prevention of a lot of disorders. The impact of journals publishing data on medicinal plants is increasing. There is also a rising trend to include phytotherapy in the curriculum of medical schools.

Nowadays over 70% of German physicians prescribe herbs, and St. John's Wort is more commonly used than any chemical medicine to treat mild to moderate depression. Phytotherapy is considered relatively safe as it contains multiple chemicals with a specific composition acting as 'effect-enhancing and/or side-effects neutralizing', though there is limited scientific evidence for this assumption.

There is increasing evidence that in several chronic disorders an increase in production of free radicals or reactive oxygen species (ROS) play a critical role. High reactivity of free radicals causes changes in most of cellular components, leading to lipid peroxidation (3).

Medicinal plants are a source for a wide variety of natural antioxidants and are used for the treatment of diseases throughout the world (3). Some of these properties are antimicrobial (4), anti-cancer (5), anti-diabetic (6), anti-atherosclerosis (7), immunomodulatory (8), and even reno-protection or hepato-protective effects (9,10).

Recently, due to beneficial effects of antioxidants, particularly natural antioxidants, in the treatment and prevention of diseases, there has been a considerable interest in finding natural antioxidants from plant sources. The studies on medicinal plants show that most of them possess significant antioxidant activity (3).

In this regard various animal models including diabetes, hyperlipidemia, autoimmune encephalomyelitis, inflammatory bowel disease, ischemia-reperfusion in rat skeletal muscle or kidney, hepatotoxicity, renal toxicity, radiation injury, and cataract for assessing antioxidative effects of medicinal plants have been investigated and most of them have been treatable with specific medicinal plants according, at least in part, to their antioxidant properties (3). Medicinal plants with antioxidant activities have also been shown to be useful for the prevention of atherosclerosis and cardiovascular diseases by reducing lipids peroxidation (11). Most of medicinal plants have specific

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compounds, other than antioxidants, which are effective in the treatment or prevention of diseases. In this regard, medicinal plants have also been a reliable source for preparation of new drugs. Nowadays, researchers more than before are dependent on medicinal plants for discovery of new drugs with fewer side effects.

Therefore, due to the importance of oxidative stress in the pathophysiology of most of the hard curable diseases, the use of medicinal plants with antioxidant properties is important and should be considered more than before. Drug therapy and even drug discovery should also be focused more than before on this source. Multidisciplinary team work including ethnobotanists, pharmacologists, physicians and phytochemists is essential for the fruitful outcome of medicinal plants research.

More importantly, regulations are also needed to ensure efficacy, quality and safety of herbal medicines. Different countries define herbal medicines differently. Furthermore, different countries have adopted various approaches for trading, dispensing, licensing and manufacturing of medicinal products.

In most of countries in Europe, herbal medicines are either fully licensed as medicines with efficacy proven by clinical trials. However, in Iran and in the United States, most herbal products are considered as dietary supplements and thus are not required to meet the standards for drugs.

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MRK is the single author of the manuscript.

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