

Medicinal plants and sustainable human health: a review

Abstract

The significance of medicinal plants in sustainable human health cannot be overlooked. These plants have healing/therapeutic properties in one or any of their organs. The use of these plants is increasing worldwide. They are used in several conditions to augment and maintain human health. In sustainable human health management, medicinal plants have played a vital role which has led to the growing interest in alternative therapies and therapeutic use of plants. This is because; it is very cheap in comparison to the synthetic industrial forms of medication. However, medicinal plants are threatened as a result of human impact and uncontrolled wild collection; it is therefore recommended that deliberate efforts towards domestication and cultivation are essential for continuous supply of these plant species.

Keywords: medicinal plants, sustainable, human health

Volume 2 Issue 4 - 2018

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Received: November 9, 2017 | **Published:** August 07, 2018

Introduction

The importance of plants in traditional medicine and as raw materials in pharmaceutical industries cannot therefore be overemphasized. The use of herbs to treat diseases is almost universal among non-industrialized societies. A number of traditions came to dominate the practice of herbal medicine at the end of the twentieth century. Many of the pharmaceuticals currently available to physicians have a long history of use as herbal remedies, including opium, aspirin, digitals and quinine. The use of medicinal plants is increasing worldwide, in view of the tremendous expansion of traditional medicine and a growing interest in herbal treatments. Plants are used in medicine to maintain and augment health-physically, mentally and spiritually as well as to treat specific conditions and ailments.¹ It has been found that countries in Africa, Asia and Latin America use traditional medicine to help meet some of their primary health care needs. In Africa, for example, up to 80 percent of the population uses traditional medicine for primary health care. In industrialized countries, adaptation of traditional medicines is termed “complimentary??” or “alternative” medicine. Traditional medicine has maintained its popularity in all regions or the developing world and its use is rapidly spreading in industrialized countries. The global market for herbal medicines currently stands at over US \$80 billion annually and is growing steadily.¹ In Nigeria, Ghana, Mali and Zambia for example, the first line of treatment for 60% of children with high fever resulting from malaria is the use of herbal medicines at home. The plant kingdom contributes immensely to human health when no synthetic medicines were available and when no concepts of surgery existed. There is therefore need to conserve these plants associated with indigenous knowledge for human development and good health. Synthetic drugs gained popularity against green remedies because their fast-acting effects, however, people have begun to realize the benefits associated with natural remedies. Chemically prepared drugs may act quickly, but they have side effects which affect human body negatively in the long run, whereas, medicinal plants work in an integrated or probiotic with little or no adverse effects on the body.¹ A number of plant species are being used in various human health around the world. Plant species contain active ingredients such as alkaloids, phenols,

tannins, cryogenics, glycosides, terpenoids. These ingredients have been used and found effective as sweeteners, anti-infections and anti-bacterials. For instance, the bark of *Alstonia boonei* contains alkaloids and achistamine, which are useful in the treatment of fever, dizziness and high blood pressure. Ginger (*Allium sativum*) and Garlic (*Zingiber officinale*) are spicy additions to food that has long been used to maintain human health. It is not an exaggeration to say that medicinal plants have a great role to play in sustainable human health.

Role of medicinal plants in sustainable human health

Medicinal plants have been used as a source of drugs by mankind for several thousand years. In fact, ancient man was totally dependent on plants for his needs of treatment, prevention and other form of medicaments, thus, utilizing plants as drugs for millennia. Throughout the development of human culture, the use of medicinal plants has had magical-religious significance and different points of view regarding the concepts of health and disease which existed within each culture. For the past 3000 years, a large number of plants are used in health care practices, such as in Traditional Medicine in China, India and Africa, most of which contains therapeutic values which has been ascertained as such by Western standards. Furthermore, several other plants have been employed for centuries by several cultures which are less likely to be proven by western standards. The role of medicinal plants in human health is clearly enormous. Out of the 252 drugs considered as basic and essential by the World Health Organisation (WHO), 11% are exclusively of plant origin and a significant number are synthetic drugs obtained from natural precursors. Some of these drugs obtained from plants include digoxin from *Digitalis* spp., quinine and quinidine from *Cinchona* spp., vincristine and vinblastine from *Catharanthus roseus*, atropine from *Atropa belladonna* and morphine and codeine from *Papaver omniferum*. It is estimated that 60% of anti-tumour and anti-infectious drugs already on the market or under clinical trial are of natural origin.² These plants offer compounds for new drugs, biomimetic synthesis development and the discovery of new therapeutic properties not yet attributed to known compounds. In most cases, the crude extract of medicinal plants may be used as medicaments.

It has been estimated that more than 400 traditional plants or plant derived products have been used for the management of type 2 diabetes across the world. Galegine, a substance produced by the herb *Galega officinalis*, provides an excellent example of such a discovery. Experimental and clinical evaluations of galegine provided the pharmacological and chemical basis for the discovery of metformin which is the foundation therapy for type 2 diabetes. Plant derived agents are also being used for the treatment of cancer. Several anticancer agents including vincristine, taxol, vinblastine, derivatives, irinotecan and topotecan and etoposide derived from epipodophyllotoxin are in clinical use worldwide. More so, it was used as condiments or seasoning in food, which in turn provides some health value to humans.³ In sustainable human health management, medicinal plant has played a vital role which has led to the growing interest in alternative therapies and therapeutic use of plants. The use of these plants for health practices is on the increase. This is because, it is very cheap in comparison to the conventional synthetic form of medication, in essence, and it is very affordable. Meanwhile, it can be consumed without the aid of any kind of prescription, making it easily accessible. Also, medicinal plants are known to be more productive in comparison to other forms of medication in curing certain conditions, they are known to be all natural. With the use of these plants, supposed side effects caused by conventional medicine are avoided thereby making it less harmful. When synthetic drug is being abused or incorrectly used, it results in other problems which would have been avoided using plants. In the developing countries, majority of the population does not have access to conventional pharmacological treatment, hence, the use of plants and folk medicine. More so,

ecological awareness suggests that “natural” products are harmless; users are faced with minimal health risk resulting from its usage.

Conclusions and recommendations

Demand for a wide variety of wild plant species is increasing with growth in human needs, numbers and commercial trade. Plants have provided humans with many of their essential needs, including life-saving pharmaceutical agents. However, medicinal plants are threatened as a result of human impact and uncontrolled wild collection, it is therefore recommended that deliberate efforts towards domestication and cultivation are essential for continuous supply of these plant species.

Acknowledgements

None.

Conflict of interest

Author declares that there is no conflict of interest.

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