

Prophylaxis and Treatment of Minor Symptoms as First Line of Defence against Prevalent Viral Attack

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Abstract

Traditional medicine is "the knowledge, skills, and practises based on the ideas, beliefs, and experiences unique to diverse cultures" (World Health Organisation) that are used to keep people well and to prevent, diagnose, improve, or cure physical and mental illness. Traditional medical systems vary greatly from one another according to their originating culture, environment, and geographical location (WHO, 2005)¹. Even Nevertheless, many in the field of traditional medicine agree on the need of attending to the complete person rather than just the symptoms of illness. Every kind of traditional medicine relies heavily on herbal remedies, and its practitioners treat the complete person rather than just the symptoms of disease (Conboy et al., 2007)². In this article, we take a look at the rising trend of turning to herbal remedies as a first line of defence against viral symptoms.

Keywords: Traditional medicine, Indigenous, Prevention, Health, Holistic.

Introduction:

The development and widespread usage of chemically manufactured drugs during the last century have substantially benefited health care systems around the globe. Even though Western medicine has advanced significantly over the last several decades, a sizable percentage of the population in developing countries still seeks treatment from local healers and uses herbal medicines. Traditional medicine is the first line of defence for the health of up to 90% of Africans and 70% of Indians. Traditional medicine accounts for approximately 40% of China's total health care budget and is practised in over 90% of the country's general hospitals (WHO, 2005). "However, traditional medicine is not just practised in developing countries; in the past two decades, there has been a dramatic increase in interest in natural medicines, including the

use of ethnobotanicals, across the developed world. In 2007, over 38% of American adults and 12% of American children utilised some kind of alternative medicine."

Natural Immune Systems : Without immunity mechanisms, invading germs would soon destroy the host. A healthy, live body is necessary for these defences to work. Since the body can no longer defend itself, deterioration sets very soon after death. Infectious pathogens are fought off by the immune system and the body's natural defence mechanisms.

The mucous membranes that line the oral cavity, nasal cavity, and eyelids also function as protective barriers. "Secretions that combat germs are often seen coating mucous membranes. Tears, for instance, include an

enzyme called lysozyme that fights germs and helps protect the eyes from infection by keeping the mucous membranes from becoming dry and irritated. Particles in the air that we breathe are filtered out by the airways. Mucus lines the inside of the nasal and bronchial passageways.” Airborne bacteria and viruses are trapped in the mucus and expelled by coughing or sneezing. Tiny hairlike projections (cilia) border the airways, and their synchronised beating aids in mucus clearance. The cilia move the mucus up and out of the airways, protecting the lungs from it. Stomach acid, enzymes from the pan bile, and intestinal fluids all work together to create a formidable barrier in the digestive system. These chemicals may either directly kill bacteria or inhibit their ability to proliferate. Peristalsis, the movement of bowel contents along the digestive system, and the natural shedding of cells lining the colon both contribute to the elimination of hazardous germs.

Similarly, the urinary system is protected by a number of sturdy barriers. The tube that carries urine out of the body (the urethra) shields the bladder from harm. Due to the length of the male urethra, germs seldom make it to the bladder unless they are accidentally introduced by catheters or surgical equipment. Due to its shorter length, the urethra of females may sometimes enable microorganisms from the outside to enter the bladder. When the bladder is empty, any germs that may have entered are flushed out. Typically, vaginal pH is low. Vaginal acidity keeps the population of helpful bacteria stable and kills off any potential pathogens. Certain white blood cells (neutrophils & monocytes) that engulf and kill invading germs are produced in greater numbers as part of the body's defence against infection. “White blood cells are produced in the bone marrow, so once they are released, the

increase might happen rapidly (within a few hours). First, there is a rise in neutrophils. The quantity of monocytes rises if an infection does not clear up. White blood cells go via the blood to infected areas”.

Eosinophils are another kind of white blood cell, and they tend to grow in numbers in response to allergic responses and many parasite illnesses, but not bacteria. However, a low white blood cell count may be caused by typhoid fever, viral illnesses, and bacteria that overwhelm the body's defences.

Causes of Inflammation and Treatment :

Inflammation occurs at the site of any damage, including microbial invasion. Many factors may set off the complicated response known as inflammation. Inflammatory chemicals are released by the injured tissue, instructing the immune system to:

Isolate the region, then 2 Kill any intruders, 3 Remove any dead or damaged tissue, and 4 Start fixing it

But massive microbe populations could be too much for inflammation to handle. Increased blood flow during inflammation aids in transporting immune cells to the site of injury. As a result of increased blood flow, an infected spot close to the skin's surface becomes red and heated. As a result, fluid and white blood cells may more easily move through the permeable artery walls and into the injured tissue. The inflammatory tissue swells as a result of the extra fluid. White blood cells launch an offensive against the invading microbes, releasing chemicals that fuel the inflammatory response. The spread of infective bacteria and their toxins may be slowed by other drugs that cause clotting in the capillaries of the inflamed region. The pain is caused by several inflammatory

chemicals that excite the nerves. Chills, fever, and muscular pains are typical responses to the inflammatory molecules generated during infection.

The Body's Immune Response : When an infection takes hold, the immune system kicks into high gear, secreting a plethora of antimicrobial chemicals and agents. A few instances are:

White blood cells called killer T cells that are specifically adapted to identify and eliminate the pathogen, antibodies directed against the microbe in question.

Microbes are stopped in their tracks when antibodies latch on to them. They either eliminate them directly or aid neutrophils in locating and eliminating them. Each microbe is met with a unique immune response, which is partially determined by a person's genetic makeup.

Origin and Treatment of Fever: The hypothalamus in the brain is responsible for regulating core body temperature. In humans, fever is caused by the hypothalamus literally adjusting its temperature. By redirecting blood away from the epidermis and towards the internal organs, the body is able to increase its core temperature and reduce its rate of heat loss. When the body needs to generate more heat, shivering (chills) might occur as a result of the contraction of muscles. "Until blood reaches the brain's hypothalamus at the new, higher temperature, the body will continue to store and create heat. The elevated temperature is then kept constant. When the temperature is returned to normal, the body cools itself by increasing perspiration and blood flow to the skin."

When the body detects an illness or has been injured, it raises its temperature as a defence mechanism. Although uncomfortable, a fever helps the body's defences by raising the body's temperature.

Method and Materials

Traditional medicine was the focus of data collection efforts. Traditional medicine is widely used because it is less expensive, more in line with the patient's ideology, less likely to cause unwanted side effects, more accommodating to the desire for individualised care, and overall better for society as a whole. Rather than being reserved for emergency situations, medications are often utilised for long-term care and disease prevention. People are more prone to seek out alternative treatments when contemporary medicine has failed them, such as in the case of advanced cancer or a newly developing infectious disease. Furthermore, traditional medicine has a sterling reputation as a safe, all-natural option. However, interactions between herbs and pharmaceuticals, over-the-counter medications, or even other herbs may alter their effects (Cohen and Ernst 2009; Loya, Gonzalez-Stuart, and Rivera 2009). Due to its provision of an essential health care service to people everywhere, regardless of their location or financial means, traditional medicine is a booming global industry. The estimated 1990 expenditure of Americans on "alternative" medicines was \$13.7 billion. This figure quadrupled between 1987 and 1997, with the fastest growth being seen in the use of herbal remedies. Annual spending on conventional medicine in Australia is over US\$ 80 million, Canada is around US\$ 1 billion, and the United Kingdom is around US\$ 2.3 billion. "These statistics demonstrate to the incorporation of herbal and other conventional types of medicine into a variety of health care systems

and the education of doctors throughout much of the industrialised globe.”

Commercial Value of ‘First Line of Defense:

The magnitude and profitability of the ethnobotanicals market are indisputable facts. Herbal products had a projected retail value of US\$ 5.1 billion in 1995 in the United States, “while sales of herbal medications available with no a prescription accounted for more than 30 percent of total sales of drugs available with no a prescription in Germany (Eisenberg et al, 1997).” The herbal industry in India uses the byproducts of around 960 unique plant species per year, with 178 of those species accounting for consumption in amounts more than 100 metric tonnes.

Both acute and long-term conditions, such as "cardiovascular disease," "prostate issues," "depression," "inflammation," and "immune enhancement," are now treated with herbs. Africa flower, a traditional herbal medication, has been used to treat the wasting symptoms associated with HIV for decades in that continent (Tilburt and Kaptchuk, 2008). In China, traditional herbal treatments were integral to the prevention and treatment of SARS (severe acute respiratory syndrome) in 2003.¹² Throughout the developed world, essential oils, herbal extracts, or herbal teas are sold alongside conventional drugs. In Europe, Germany and France have the biggest sales of herbal medications.

Infusions of Raw Herbs as Immunity

Builders : Herbs and plants may be consumed in a variety of forms, including the raw herb, as well as "teas, syrups, essential oils, ointments, salves, rubs, capsules, and tablets containing a pulverised or powdered version of a raw herb or its dried extract. Plant and herb extracts vary in the solvent used, the temperature at which they are extracted, and the length of time they

are subjected to the extraction process (macerates). Some examples include alcoholic extracts (tinctures), vinegar extracts (acetic acid extracts), hot water extracts (tisanes), and long-term boiled extracts (usually from roots or bark) (decoctions). Due to the lack of oversight, the quality of a herbal extract or other product may vary significantly from one maker or batch to the next." To rephrase: plants have a lot of stuff in them. Tannins and other oxygen-substituted derivatives of phenols are examples of the class of aromatic chemicals known as secondary metabolites. Several of these compounds have antioxidant properties. The importance of ethnobotanicals stems from the fact that plant components are valuable in "pharmacological research and drug development when employed directly as therapeutic agents, but also when utilised as starting materials for the manufacture of pharmaceuticals or used as models for pharmacologically active chemicals" (Li and Vederas, 2009).¹⁰ Over two centuries ago, opium was originally extracted from the pods of the poppy *Papaver somniferum*, and the first pharmacologically active pure compound to be synthesised from it was morphine.

"Penicillin, erythromycin, the cardiac stimulant digoxin from foxglove (*Digitalis purpurea*), salicylic acid, a precursor of aspirin, derived from willow bark (*Salix* spp.), reserpine, an antipsychotic and antihypertensive drug derived from *Rauwolfia* spp., and antimalarials like quinine and lovastatin, both derived from" (Li, Vedera, & Vedera, 2009). Furthermore, about 60% of all existing and investigational cancer medicines are based on natural substances. Many of the 177 cancer treatments now available have been improved by combinatorial chemistry, and more than 70% of these drugs originate from natural chemicals or mimetics. Combretastatin,

irinotecan, and topotecan are all derived from plants; camptothecin is found in the Chinese "happy tree," *Camptotheca acuminata*; and paclitaxel, another plant-based cancer drug, comes from the Pacific yew tree. Approximately 25% of all medications prescribed worldwide are now derived from plants (Sahoo et al., 2010), thanks to the 121 plant-based active compounds now in use. In the United States, thirteen plant-based drugs were approved between 2005 and 2007.

Confidence of Aging Population Herbal Medicines:

The average life expectancy of a newborn in the early 1950s was around 41 years; in many developed countries now, it is close to 80. Because of this, the senior population (those who are 65 and above) is rapidly expanding. We may anticipate an increase in the incidence of age-related diseases and the consequent need for carers as our populations age. Diseases including cancer, cardiovascular disease, dementia, osteoporosis and many others are often accompanied by the physiological decline or pathological abnormalities that are characteristic of ageing. The prevention and treatment of chronic diseases, as well as the quality and duration of a healthy life, may be significantly influenced by factors in one's everyday life, such as nutrition and exercise. The reasons of ageing have been the subject of considerable conjecture throughout the years, but it's likely that there is no one answer. While genetics do play a part in the ageing process, the oxidative stress theory has the most evidence in its favour. This model postulates that oxidative stress, the result of reactive oxygen species interacting with DNA, lipids, and proteins, is a major factor in the ageing process. But even if oxidative stress has nothing to do with becoming older, it is nevertheless linked to every major chronic ailment that comes with

getting older. Some of the alleged health advantages of herbs may originate from their antioxidant qualities.

To ensure the quality, safety, and uniformity of the product in light of the growing interest in herbal therapy, "conventional" methods of herb identification and processing need to be modernised with more accurate and repeatable procedures. There has to be more regulation of the production and distribution of medicinal products and therapies because of their high market value, potential toxicity, and increased consumer demand, particularly among the sick and elderly.

Reinforcement of Trust in Traditional Medicine :

The interest in and use of traditional medicine has seen a remarkable uptick, and with it comes two main causes of fear, each of which brings considerable challenges. Herbs (and other CAMs) are subject to a variety of regulations at the federal, state, and local levels to ensure their quality, safety, and the scientific basis behind their health claims. WHO (2005); Sahoo et al. (2008)1,11

The widespread use of herbal medicines across countries, long history, and holistic approach make evaluation and regulation difficult. Herbs of all kinds are also used. Legal criteria for traditionally used herbal medicines as recognised types of health care treatment face several barriers. "There is a lack of research data, appropriate mechanisms for control of herbal medicines, education and training, expertise within a nation's health authority and control agency, information sharing, safety monitoring, and methods to evaluate their safety and efficacy," according to a survey conducted by the World Health Organisation (WHO) in 129 countries. Examples of the kinds of support that are needed from various

nations include the sharing of information on regulatory hurdles, herbal medicine safety master classes, guidelines on the research and evaluation of herbal remedies, the provision of datasets, medicinal products regulation master classes, and global meetings.

National Policies Support for Ethnobotanical Medicines in India : When it comes to health care, "defining the role of traditional medicines in national health care programmes," assuring the authenticity, safety, and effectiveness of traditional medicines and treatments, and ensuring equal access to health care resources and associated resource information are all reliant on national laws.(WHO 2005)First, it's crucial that the herbal medicine market be standardised from top to bottom (including the industry, healthcare providers, and patients). There is currently no worldwide standard for the regulation of herbal supplements, despite the fact that several countries presently supply them.

Thus, the common experience in each area impacts the understanding of therapeutic rationales for their use, efficacy, and safety. "We present a high-level summary of the legislation in the US, Canada, and Europe that might be used to shape the legal framework of herbal remedies business in other locations in the following section. According to the Dietary Supplement Health and Education Act (DSHEA) of 1994 in the United States, herbs, botanicals, natural concentrates, metabolites, and extract components are all considered dietary supplements. Dietary supplements are not subject to approval by the Food and Drug Administration."

The Food and Drug Administration does not have to verify the safety or efficacy of herbal drugs since they are deemed dietary

supplements under the Dietary Supplement Health and Education Act (DSHEA). "This means that the manufacturer of herbal medicines must check for the absence of any potentially dangerous substances and guarantee that any claims made about their products are supported by adequate evidence. A manufacturer or distributor of a dietary supplement containing a new dietary component (an ingredient not commercialised in the United States prior to October 1994) may be required to undergo premarket review to provide safety data and other information."

While it has developed certain guideline levels for other kinds of foods, the FDA has not released rules about what constitutes a safe or dangerous quantity of contaminants in dietary supplements (FDA, 2010). U.S. suppliers of herbal supplements (dietary supplements) are subject to stringent labelling and packaging requirements designed to prevent false claims that the supplements may treat, prevent, or cure disease. No claims may suggest that the product may reverse the effects of ageing or any other normal physiological process (FDA, 2010). In Canada, herbal medications are considered completely safe according to the Natural Health Products Regulations.

According to these regulations, no organic products may be sold in Canada without first receiving a product licence. Information on the product's medicinal components, manufacturing facility, dosage strength, inactive compounds, and recommended use is required for licencing purposes. Once a product has a licence, it must prominently display the licence number and follow certain labelling rules to offer accurate information to buyers.

A site licence is also necessary for the production, packaging, labelling, and importation of herbal medicines. In addition,

Good Manufacturing Practises (GMPs) must be used to ensure the product's quality and safety. Because of this, the whole natural health products industry, from raw material extraction to retail sale, has to develop and follow best practises and standards. The GMPs are outcome-based, thus they ensure that products are safe and of high quality while yet allowing for specialised quality assurance procedures to be put in place. All Canadian product licensees are obligated to monitor their products for adverse effects and report them to the Canadian Department of Health.

International Safeguards for Herbal Medications : European Parliament and the Council of Europe approved European Directive 2004/24/EC in 2004 (Calapai, 2008) to provide guidelines for the safe and effective use of herbal medicines across the European Union. According to Article 3, before being put on the market, herbal medicines in Europe must be approved by the respective national regulatory agencies and must be shown safe and effective. "(Calapai, 2008)"The European Union (EU) requires 30 years of therapeutic use before registering herbal medical items, 15 years of use inside the EU, and 15 years of use outside the EU. When applying for a marketing licence, products must fulfil the same standards for quality and safety.

The data shown here are based on the European Pharmacopoeia and other comparable publicly available monographs created by the pharmaceutical industry. The suggested criteria not only characterise the quality of products, but also exclude the presence of harmful substances, adulterants, and contamination. In an effort to standardise information and legislation regarding herbal medicines, the EU organised many committees. A variety of resources have been developed, including "guidelines on good agricultural and collection

practise for starting materials of herbal origin," "guidelines on standardisation of applications," and "guidelines on establishing pragmatic strategies for identifier and quantification of herbal preparations and one's complex mixtures."

Conclusions

Patients often choose for herbal treatments. Some people supplement conventional medicine with herbal remedies. Traditional medicine includes herbal remedies, but in many developing countries, these remedies are the only ones that can be afforded. Herbal supplement shoppers need to know that the products they're buying are safe and contain the claimed amount of active components before making a purchase. Evidence-based recommendations for dosing, side effects, and efficacy should also be made available to consumers. To guarantee the secure production and distribution of herbal medicines, worldwide legal regulations must be harmonised. An herb's potential benefits to public health and medical care cannot be fully realised, however, until legislation is passed to facilitate the appropriate use of scientific evidence of value for the plant.

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