

Traditional Medicine in Nigeria: Current Status and the Future

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Abstract: Medicinal plants have played a key role in the world health care with about 80% of Africans depending on phytomedicine which has shown a wide range of uses in the treatment of diseases, especially priority diseases of Africa such as HIV/AIDS, malaria, sickle cell anaemia, diabetes and hypertension. The usage of plants, plants extracts or plant-derived pure chemicals to treat disease in Nigeria become a therapeutic modality which has stood the test of time. Today, several pharmacological classes of drugs include a natural product prototype. A team work amongst ethnobotanists, ethnopharmacologist, physicians and phytochemists is must for the fruitful outcome on medicinal plant research. Although, there are some problems limiting the development of phytomedicine such as lack of standardization, efficacy and quality control of plants used, extinction of some plant species and lack of funds and others. These problems when fully addressed will help the future development and harmonization of phytomedicines.

Key words: Traditional medicines, herbal drugs, safety and standards of herbal drugs, present status and future impact, quality control, Nigeria

INTRODUCTION

The traditional medicine programme of the WHO (Rukangira, 2001) defines traditional medicines as the sum total of all the knowledge and practices whether explicable or inexplicable used in diagnosis, prevention and elimination of physical, mental or social imbalance and relying exclusively on practical experience and observation handed down from generation to generation whether verbally or written. Traditional (or herbal) medicine is in an evolutionary process as communities and individuals continue to discover new techniques that can transform practise in the field of medicinal sciences (Ansari and Inamdar, 2010). Traditional medicine and drug discovery using natural products is still an important issue in the current target-rich lead-poor scenario (Patwardhan *et al.*, 2004).

According to the World Health Organisation (WHO), about three quarters of the world population depends upon traditional remedies (mainly herbs) for the health care of its people. In fact, herbs and plants are the oldest friends of human being. They not only provided food and shelter but also served the humanity to cure different dysfunctions. Traditional (herbal) medicine is popular. They are extensively used in the developing world where in many places, they offer a more widely available and more affordable alternative to pharmaceutical drugs. In Africa, for example, up to 80% of the population depends on them, according to WHO estimates. A study by the Roll Back Malaria initiative in Nigeria, herbal medicine is

the first choice for home treatment of nearly two thirds of children with high fever. The new health agenda in Nigeria and Africa focuses on the institutionalization of traditional medicine in parallel with orthodox medicine into the natural health care scheme in order to move the health agenda forward since, effective health cannot be achieved in Africa by orthodox medicine alone unless it has been complemented with traditional medicine as recorded by Elujoba *et al.* (2005).

Historians from all around the world have produced evidence to show that apparently all primitive peoples used plants often in a sophisticated way. Quinine from Cinchona bark was used to manage the symptoms of malaria long before the disease was identified and the raw ingredients of a common or garden aspirin tablet have been a popular painkiller for a longer than we have had access to tablet making machinery. By the middle of the 19th century at least 80% of all the medicines were derived from plants. Then, came the revolution inspired by

Table 1: Few examples of plant derived modern drugs

| Active ingredients | Botanical sources |
|--------------------|-----------------------|
| Aspirin | Willow bark |
| Atropine | Belladonna |
| Capsaicin | Pepper plant |
| Colchicine | Autumn crocus |
| Digitalis | Fox glove |
| Morphine | Opium poppy |
| Pilocarpine | Jaborandi tree |
| Podophyllin | May apple |
| Quinine | Chinchona bark |
| Reserpine | Indian snake root |
| Taxol | Pacific yew tree bark |

Table 2: African medicinal plants with their medicinal values

| Plants | Disease cured | Action | Usage |
|----------------------------------|--|--|---|
| <i>Xylopiya aethiopica</i> | Intestinal spasms, cough, post partum tonic for lactation, stomach, remedy, bronchitis, biliousness, dysentery, headache, female hygiene | Soothing, antispasmodic, remove biliousness, emollient, sedative | Poultice of the plant |
| <i>Garcinia kola</i> | Bronchitis, throat infections, relieve colic, head or chest cold, cough and liver disorder | Antibiotic, antispasmodic, soothing, sedative, ease cough, expectorant and choleric | Eating the seed of the plant |
| <i>Vitex doniana</i> | Gastroenteritis, diarrhoea, dysentery, infertility and eye diseases | Antimicrobial, invigorating and anti-inflammatory | Stem bark decoction |
| <i>Cryptolepis sanguinolenta</i> | Fever, malaria, urinary and upper respiratory tract infection, rheumatism and venereal diseases | Antiplasmodial, antiviral, antispasmodic, expectorant and anti-inflammatory | Hot poultice of dried root |
| <i>Euphorbia hirta</i> | Bronchial and respiratory disorders, urinary disorder, skin diseases, ocular diseases and dysentery | Soothing antispasmodic, regenerates skin, emollient antiparasite, anti-inflammatory, antimicrobial, antiviral, antibiotic and diuretic | Aqueous decoctions of the plant, latex of the plant for cuts and warts |
| <i>Ocimum gratissimum</i> | Respiratory infections, diarrhoea, headache, ophthalmic (Ocular) diseases, skin diseases, pneumonia, cough, fever and conjunctivitis | Anti-inflammatory, soothing, expectorant, invigorating, antiseptic, sedative and emollient | Aqueous and ethanol extracts of the leaves |
| <i>Citrus aurantifolia</i> | Nervousness, anxiety, insomnia and gastroenteritis | Sedative, mildly narcotic anti-inflammatory | Infusion of leaves and flowers (orange blossom) ethanol and aqueous leaf extracts |
| <i>Cajanus cajan</i> | Sickle-cell anaemia | Anti-anaemic because of phenylalanine | Seed |

the development of the pharmaceutical industry and synthetic drugs dominated through medicine has never been out of scene. Moreover, today many pharmaceutical classes of drugs include a natural product prototype (Gilani *et al.*, 2000).

Traditional medicines have given us very useful synthetic clues of modern drugs in the past (Table 1) (Gregory, 2004). Most of these plant-derived drugs were originally discovered through the study of herbal cures and folk knowledge of traditional people and some of these could not be substituted despite the enormous advancement in Synthetic Chemistry (Gilani *et al.*, 2005). A lot of traditional medicines have been reported with their different ethno medical correlations (Table 2).

SAFETY AND STANDARD OF TRADITIONAL MEDICINES

The growing popularity of herbal remedies is fuelling and is to some extent fuelled by increasing scientific interest in herbal medicine (Ansari and Inamdar, 2010). WHO estimates that of the 35,000-70,000 species of plants that are used for medicinal purposes around the world some 5,000 have been submitted for biomedical scrutiny. Scientific evidence of efficacy is beginning to emerge from randomized controlled trials in which herbs compare favourably with placebo. Examples, St. John's wort for mild depression and of course, a number of commonly used pharmaceutical products are of botanical origin-sapirin, digitoxin and quinine are three well known examples.

Another reason for the growing popularity of herbal medicines is that many people believe they are safer more natural than pharmaceuticals. However, studies have shown that not all natural products are safe, some

poisons are also natural (Ansari and Inamdar, 2010). Herbal medicine however, natural can cause serious illnesses from allergy to liver or kidney malfunction to cancer and even death. In terms of carcinogenicity for example, the toxicological potential of natural plant chemicals is roughly the same as that of synthetic chemicals (WHO, 2001). Most herbal products on the market today have not been subjected to drug approval process to demonstrate their safety and effectiveness. Some of them contain mercury, lead, arsenic (Kew *et al.*, 1993) and corticoids (De Smet, 1995) and poisonous organic substances in harmful amount. Hepatic failure and even death following ingestion of herbal medicine have been reported (Chattopadhyay, 1996). A prospective study shows that 25% of the childhood blindness in Nigeria and India were associated with the use of traditional eye medicines (Harries and Cullinan, 1994). Side effects of some medicinal plant have been reviewed (Gupta and Raina, 1998).

Perhaps, the biggest problems in Nigeria with herbal medicine are a lack of standardization and of safety regulations. Standardization of a herbal medicine that may contain hundreds of chemical constituents with little or no evidence indicating which might be responsible for the presumed or proven therapeutic effect is a particularly theory issue (WHO, 2001). Figure 1 show a flow chart for the study of plants used in traditional medicine, the most important feature of all health care is to do no harm (oath of maomonides) assuring that whatever is being taken by humans for medicinal purposes is safe. Effectiveness is a secondary consideration. Many users of herbal medicines consider that they are safe for human consumption an assumption based in part on extensive prior field experience. If this concept ever had validity, it is no longer

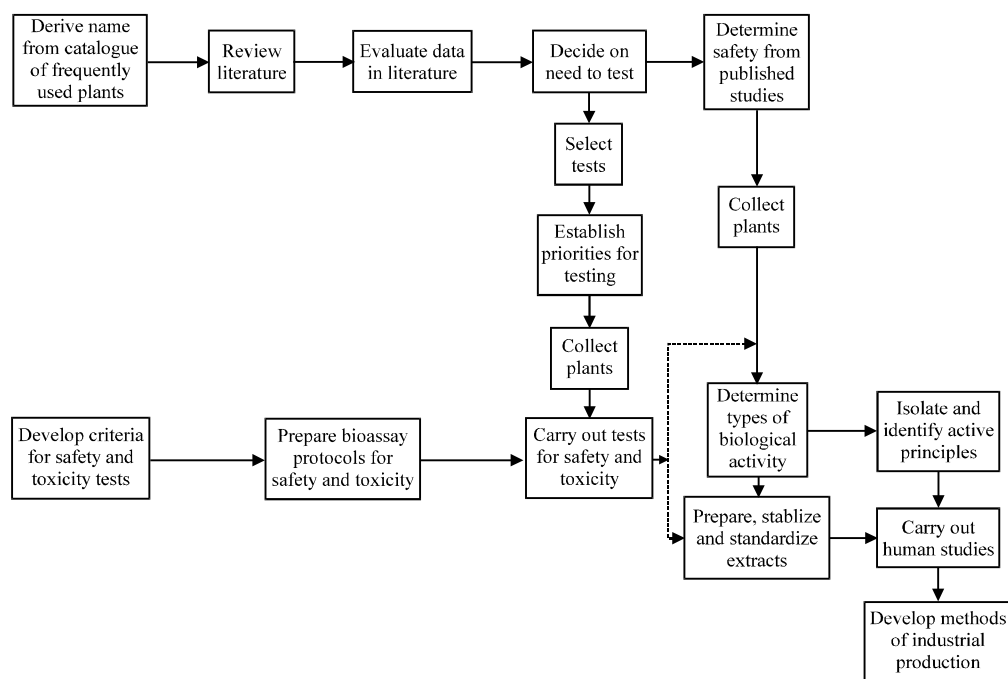


Fig. 1: A flow chart for the study of plants used in traditional medicine

correct. In Nigeria, teas and infusions of herbs are the most popular traditional drug formulation available today. The WHO has issued a set of some guidelines for the study of traditional medicines (Anonymous, 2000). On a batch to batch basis, there must be botanical, chemical and biological standardization of products and collateral studies which would establish both the safety of the product and a demonstration of its efficacy and meaningful shelf-life.

PROBLEMS TO BE SOLVED BEFORE HERBAL MEDICINE BECOME MAINSTREAM

To reach a stage where herbal products of assured quality and effectiveness become integrated into mainline medicinal treatment in Nigeria, several obstacles must be overcome. The prejudice of current practicing health-care professional who did not learn about phytomedicines during their academic programs and consequently, believe all of them to be ineffective forms a barrier (Tyler, 1999). Orthodox medical practitioners are to be convinced of the efficacy of plant extract (Tattam, 1999). Equal obstinate is the opinions of some traditional herbalist who believe that unprocessed natural products have an innate superiority and that the mystical aura surrounding herbs will somehow be destroyed by extraction and standardization (Tyler, 1999). The use of folk beliefs and knowledge of traditional healers is a short cut to the discovery and isolation of pharmacologically active compound (Holland,

1994). However, intellectual property right should protect the tribal and traditional knowledge, so that it can help end the piracy by both Nigerian and foreign drug companies. Major challenge that must be overcome before herbs can join mainstream medicine is the quality of the literature in the field. Books, pamphlets, journals and especially these days, the internet are filled with misinformation much of it written to sell product some of it written to express a point of view based on hope, not fact or on misinformation (Tyler, 1999). Another problem is that clinicians working with herbal products are still relatively unfamiliar with them and often do not realize the necessity of adequate dosage from definition in the published papers. Many erroneous and irreproducible results have appeared in the medical literature because the clinicians accept at face value the quality of an herb that was adulterated, misidentified. In addition, they often fail to identify specifically that is by scientific name, the botanicals in the product tested as well as the precise dosage administered (Schuppan *et al.*, 1999).

STATUS OF HERBAL MEDICINE IN NIGERIA

Nigeria has a rich tradition of herbal medicine. With its diverse cultures and traditions, Nigeria is rich in traditional medicine and has eminent and respected traditional healers involved in taking care of the teeming population. In Nigeria, traditional medicine practices are a main source of livelihood for a significant number of

populations who depend on it as their main source of income. High population growth rate (2.8% annually) and poverty coupled with dwindling economic reserves in the country make Nigerians resort to more affordable sources for their immediate health needs. As the population increases, demand for traditional medicine will increase. In order to provide affordable health care services especially, to those who cannot afford orthodox medicine, several state governments through their traditional medicine boards have tried to institutionalise the use of traditional medicine. They do this through tradomedicine fairs and exhibition which seeks to enlighten the public on the possible cures from this kind of traditional medicine. Nigeria has established national and state traditional medicine boards for regulation of herbal medicine practice and to promote cooperation and research. The Federal Government has also set up and financed the Federal College of Complementary and Alternative Medicine, Lagos under the Federal Ministry of Health to train herbalist on its use and practices. Herbalists are also being encouraged to register their proven and efficacious standardised herbal preparations with the National Agency for Food and Drug Administration and Control (NAFDAC).

CONCLUSION

The vision of the role of traditional medicine and natural product science for the future should continually be evolved for the future when the pressures on available resources including land use water and oil will be different. All the available technologies should be completely integrated into developing the societal role of traditional medicine in global health care. It is the duty to create these visions and maintain them for the creative growth of the health care individuals and for the security and stability of societies. The future of traditional medicine needs that we be a visionary global scientist. Innovative strategies employing all the associated sciences and technologies must be created in order that the natural product sciences including traditional medicine can help in the development in sustainable manner of the foods and the health care products including drugs for a dramatically expanding population. Finally, the development of multidisciplinary, national, collaborative research programs should be encouraged which will encourage the local and global scientific development of the natural resources. A team work amongst ethno botanist, ethno pharmacologist, physicians and phytochemist is must for the fruitful

outcome on medicinal plants research. While the ethno pharmacologists have a greater role in the rationalization of combination of activities, the phytochemist's role will slightly shift towards standardization of herbal medicines.

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