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REVIEW ARTICLE

Uses of medicinal plants in Ethiopia.

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Abstract

Medicinal plants have been always a complete source of painkillers since early time. The Ethiopian traditional system of medicine is a rich source of plants for the various diseases. They are used for thousands of years to flavor and conserve food, to treat health disorders and to prevent diseases. The information of their medicinal properties has been passing on over the centuries within and among human communities. Active compounds produced during secondary vegetal metabolism are usually responsible for the biological properties of some plant species used all over the world for various purposes, including treatment of infectious diseases.

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Introduction:-

Plants have been utilized as medicines for thousands of years (samuelsson, 2004). These medicines initially took the form of crude drugs such as tinctures, teas, poultices, powders, and other herbal formulations (balick and cox, 1997; samuelsson, 2004). The specific plants to be used and the methods of application for particular ailments were passed down through oral history. Eventually information regarding medicinal plants was recorded in herbals. In more recent history, the use of plants as medicines has involved the isolation of active compounds, beginning with the isolation of morphine from opium in the early 19th century (kinghorn, 2001; samuelsson, 2004). Drug discovery from medicinal plants led to the isolation of early drugs such as cocaine, codeine, dig toxin, and quinine, in addition to morphine, of which some are still in use (newman et al., 2000; butler, 2004).

People, since the beginning of civilization, have used plants for multiple purposes. Historical accounts of traditionally used medicinal plants depict that different medicinal plants were in use as early as 5000 to 4000 bc in china, and 1600 bc by syrians, babylonians, hebrews and egyptians (dery et al., 1999). This time, the chemical and genetic constituents of plants are being increasingly exploited for human benefit (gerique, 2006). In this regard, studies indicate that 25% of the modern drugs are derived from the extracts of medicinal plants (robert and john, 1983). Traditional medicine is any ancient and culturally based healthcare practice different from scientific medicine and commonly regarded as indigenous, alternative or folk medicine mainly orally transmitted knowledge owned by communities of different cultures (martin, 1995). The high cost of drugs and the inability of many developing countries to purchase modern drugs have forced local communities to look for products in the form of medicinal plants that are proved to be effective, safe, inexpensive and culturally acceptable (mohammed adefa and berhanu abraha, 2011). For that reason, more than 70% of world populations use plant remedies for their primary healthcare system (nair and nathan, 1998). About 85% of world population uses herbal medicines for prevention and treatment of diseases, and the demand is increasing in developed and developing countries (abramov v., 1996). Some 25% of drugs contain compounds obtained from higher plants (farnsworth nr.; 1994]. Moreover, the investigation of herbal drugs from plants to treat aids, cancer, and malaria, chronic complaints such as rheumatism, arthritis and asthma have been reported (lee kh., 1999) herbal remedies are enjoying widespread popularity throughout the world (almeida c., et al., 2006). However, only 10% of medicinal plant species is cultivated today while the larger majority being left under wild stands threat (bekele e., 2007). Ethiopia is endowed with a diverse biological resources including about 6, 500 species of higher plants, with approximately 12% endemic, hence making it one of the six

plant biodiversity rich regions (kelbessa e., et al, 2000) of these, more than 62.5% of the forest area are found in southwest region of ethiopia (mekonen a. And bluffstone r., 2007) where most of the medicinal plants are confined (abbink j., 1995) and have been used as a source of traditional medicine to treat different human and livestock ailments (yineger h., et al, 2008).

Uses of medicinal plants for human health care:-

The use of plants for treating diseases is as old as the human species. Popular observations on the use and efficacy of medicinal plants significantly contribute to the disclosure of their therapeutic properties, so that they are frequently prescribed, even if their chemical constituents are not always completely known. All over the globe, especially in south american countries, the use of medicinal plants has significantly supported primary health care (maciel m., et al, 2002). From 250 to 500 thousand plant species are estimated to exist on the planet, and only between 1 and 10% are used as food by humans and other animals (cowan m., 1999). The majority of the populations in developing countries rely on herbal preparation to help enhance health. Out of a quarter of a million identified higher plants in the world about one fourth it has at one time or other used by some people or cultures for medicinal purpose (nair m. And nathan g., 1998). The present activities of international organizations in the field of traditional medicine, like who in designating the world in six regional zones (african, american, south-east asian, european, western mediterranean, western pacific), and providing a technical and financial supports, are the most encouraging system to collect, describe and investigate the medicinal plants at institutional level (sofowora a., 1982). The recent reports have indicated that, 25% of the modern drugs are derived from the extract of medicinal plants (robert h. And john b., 1983). In the industrialized countries people are seeking alternative herbal medicine because of the side effect from the strong modern drugs. According to world health organization (who) 70 to 90% of world population especially from developing countries, use plant remedies for their health care (belachew d., 1984). Moreover, the high cost of drugs and the inability of many developing countries to purchase modern drugs have prompted them to look for local products in the form of medicinal plants, that have proved to be effective, safe, inexpensive and culturally acceptable (sofowora a., 1982). Developing countries like ethiopia have identified potential usage of medicinal plants, and integrated them in to their overall health care system (andrew t., 1982). Ethiopia, with its diverse topography, has a rich endemic element in its flora approximately thousands of higher plants species including medicinal plants (harlan j., 1969). Similarly, ethiopia is rich with diverse heritage of traditional medical practices. However, due to population pressure, accelerated urbanization, recurring drought, and deforestation, most of the medicinal plants are either destroyed or are on the verge of extinction (robert h. And john b., 1983). 80% of ethiopian, people use medicinal plants and plant remedies selected over centuries. Moreover, medicinal plants remain the most important and sometimes the only source of therapeutics (abebe demissie, 2001). The knowledge of medicinal plant use is yet incomplete because there has not been a total inventory of medicinal plants that have been traditionally known to indigenous people (mesfin tadesse et al., 2005). In addition to environmental degradation, deforestation, agricultural expansion, over exploitation and population growth is the principal threat to medicinal plants in ethiopia (kebu balemie et al., 2004). Traditional people around the world possess unique knowledge of plant resources on which they depend for food, medicine and general utility including tremendous botanical expertise (martin, 1995). This implies that humans are dependent on other organisms for their life. Although various animal and mineral products contribute to human welfare, the plant kingdom is most essential to human wellbeing especially in supplying his basic needs. The indispensable dependency of human up on plants for their livelihood was primarily started by domestication and dates back 10,000 years (martin, 1995). Plants have been used as a source of traditional medicine in ethiopia from time immemorial to combat different ailments and human sufferings (asfaw et al., 1999). There is a large magnitude of use and interest in medicinal plants in ethiopia due to acceptability, accessibility and biomedical benefits (dawit, 2001). The continued dependency on herbal medicine along with the side of modern medicine is largely conditioned by economic and cultural factors (aketch, 1992). In addition to these factors, the fact that modern medical services are inaccessible to the vast majority of the populations due to their costs made herbal medicines more acceptable. Hence, in present-day africa including ethiopia, the majority of people lack access to health care and where available the quality is largely below standard (abbiw, 1996). Therefore, herbal remedies are the world's therapeutic means to act against diseases for a large proportion of people both rural and urban centers in developing countries like ethiopia (abbiw, 1996). In ethiopia, little emphasis has been given to ethno botanical studies over the past decades (dawit, 2001; mirutse, 1999), even if there has been some attempt in investigating medicinal plants and indigenous knowledge on sustainable use and management of plant resources. Traditional medicine has played a significant role in ethiopia, in treating health problems in both livestock and humans (addis g., et al, 2001). Knowledge of medicinal plants of ethiopia and of their uses provides vital contribution to human and livestock health care needs throughout the country (belayneh a., et al, 2012). The plant- based human and livestock health care persists and remains as the main alternative treatment

for different ailments in Ethiopia, largely due to shortage of pharmaceutical products, prohibitive distance of the health service stations, unaffordable prices by small holder farmers and pastoralists for conventional drugs, emergence and re-emergence of certain diseases and appearance of drug resistant microbes and/or helminthes (bekele d., et al, 2012).

Medicinal plants play a crucial role in health care needs of people around the world especially in developing countries (bekalo et al., 2009). About 80 % of the population of most developing countries still depends on the use of traditional medicine derived from plants (cunningham, 1993). People living in remote areas depend more extensively on traditional medicine as modern systems are out of reach (mahonge et al., 2006). The plant kingdom is a treasure house of potential drugs and in the recent years there has been an increasing awareness about the importance of medicinal plants. Drugs from the plants are easily available, less expensive, safe, and efficient and rarely have side effects. The plants which have been selected for medicinal use over thousands of years constitute the most obvious choice of examining the current search for therapeutically effective new drugs such as anticancer drugs (dewick p., 1996), antimicrobial drugs (phillipson j. And wright c., 1996) and antihepatotoxic compounds. According to world health organization (who), medicinal plants would be the best source to obtain variety of drugs. However, such plants should be investigated to better understand their properties, safety, and efficiency (arunkumar s. And muthuselvam, 2009). Medicinal plants contain some organic compounds which provide definite physiological action on the human body and these bioactive substances include tannins, alkaloids, carbohydrates, terpenoids, steroids and flavonoids (edoga h., et al, 2005). These compounds are synthesized by primary or rather secondary metabolism of living organisms. Plant products have been part of phytomedicines since time immemorial. This can be derived from barks, leaves, flowers, roots, fruits, and seeds (criagg g. And david j., 2001). About 200,000 natural products of plant origin are known and many more are being identified from higher plants and microorganisms (kinghorn a., et al, 2011, and aly a., 2010). Some plant-based drugs have been used for centuries and for some like cardiac glycosides, there is no alternative conventional medicine (who, 2011). Due to either limited availability or affordability of pharmaceutical medicines about 80% of the rural population in sub-saharan africa (ssa) depends on traditional herbal remedies for primary health care (phc) and veterinary use (who, 2002). Multiple drug resistance (mdr) has developed due to the indiscriminate use of antimicrobials and re-emergence of diseases; adverse drug reactions (adr) and the high costs of antimicrobials have been key contributors to ineffective management of infectious diseases in many developing countries (kapila, 2005; runyoro et al., 2006). The provision of safe and effective traditional medicines could become a critical tool to increase access to health care (who, 2002). Medicinal plants represent an important health and economic component of biodiversity and also conservation and sustainable use (rhaman et al., 2004).

Developing countries have continued to rely on the use of traditional medicinal plants as their primary source of healthcare. The complex knowledge, beliefs and practices generally known as indigenous knowledge (ik) or traditional knowledge develops and changes with time. Indigenous knowledge includes time-tested practices that developed in the processes of interaction of humans with their environment (balick m. J and cox p., 1996). Ethiopia is characterized by a wide range of ecological, edaphic, and climatic condition that accounts for the wide diversity of its biological resources both in terms of flora and fauna (jansen, 1981). The demand for medicinal plants is increasing in both developing and developed countries and the bulk of their material trade is still from wild harvested plants and safe, effective and inexpensive indigenous remedies are gaining popularity among the people especially in the developing countries, where modern health service is limited (pareek and trivedi, 2011). Traditional medicines can be defined as health practices, approaches, knowledge and beliefs incorporating plant, animal and mineral based medicines, spiritual therapies, manual techniques and exercises applied to treat, diagnose and prevent illnesses or maintain wellbeing (who, 2003).

Characteristics of traditional medicine in Ethiopia:-

Ethiopia has a long history of traditional medicine and has developed ways to combat disease through it (negussie b., 1988). Healing in Ethiopian traditional medicine is not only concerned with curing of diseases but also with the protection and promotion of human physical, spiritual, social, mental and material wellbeing (beshaw m.,1991). It is widely believed in Ethiopia that the skill of traditional health practitioners is 'given by god' and knowledge on traditional medicines is passed orally from father to a favorite child, usually a son or is acquired by some spiritual procedures (who, 1990). Drugs are stored usually in containers such as bottles, papers, pieces of cloth, leaves and horns, and were kept anywhere at home (abebe w., 1984). In addition to traditional medicinal practices by

professional healers, there is also an old tradition of self-care in the home and another, more recently evolved subsystem of lay care of transitional medicine (slikkerveer l., 1990 and fassil h., 2003).

Preventative practice:-

Traditional ethiopian medicine includes several elements or disease prevention (pankhurst r., 1965). Sweeping or covering floors with particular plants is another traditionally practiced disease preventive measure. Other methods of disease prevention include isolating people with contagious diseases, prohibition or controlling movement and taking children away from the affected areas (pankhurst r., 1968).

Curative practices:-

Traditional ethiopian medicine is commonly used to treat a variety of diseases employing substances as recommended by professional traditional medical practitioners. The conditions that claim to be treated include gastrointestinal disturbances, respiratory disorders, sexually transmitted infections, tuberculosis, impotency, haemorrhoids, rabies, intestinal parasites, skin problems, liver diseases, mental disorders, hypertension, diabetes, gynaecological conditions rheumatism, malaria and others (negussie b., 1988). Professional traditional healers known by different names in different parts of the country are the primary players in the curative aspect of traditional medicine practice. One of the well-recognized groups of these healers are the secular medhanit awakis (kitel betashs). The medhanit awakis diagnose disease conditions mostly by physical examination and questioning patients (moges a., 1984).

Surgical practice:-

Traditional practices considered to be related to surgery include bone-setting, uvulectomy, circumcisions, bleeding and cupping, cautery, scarification and tooth extraction. In most places, the healer involved in bone-setting is the local wogesha (gebere s., et al, 1984).

Conclusion :-

Medicinal plants are collected mainly from forest and grassland varieties. These products are universally recognized and sold at its maximum amount. Ethiopia has a large potential to improve the medicinal plant treatment system to a large production system. They should be multiplied through medicinal gardens, good handling practices and scientific growth. These huge sources with sustainable utilization will lead to the development of economy and treatment practices that are natural. The conservation practices also play an important role to have more medicinal plants around us at the time of the use. In general, the majority of the ethiopian people used to gain medicinal plant information from their parents and partners in their locality by paying small amounts of money.

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