Environmental Changes and its Effects on the Indigenous Medical Care System in Zambia: A Case of Southern and Western Province of Zambia

Kasebula Francis (PhD)

Mongu Catholic College of Education

DOI: https://doi.org/10.47772/IJRISS.2026.101100098

Received: 04 November 2026; Accepted: 09 November 2026; Published: 21 November 2026

ABSTRACT

This study sought to discuss the effects of climate change on the indigenous medical practices in Zambia due to change of the environment. In order to come up with an in-depth analysis of the discussion, diverse books and scholarly articles were consulted. This study used purely a qualitative research method, a cross examination and analytical review of key issues of indigenous medical practices in Zambia was implored in this study. Primary data was collected from the National Archives of Zambia (NAZ), University of Zambia Repository and Libraries. Oral interviews were conducted face to face with the key informants such as traditional leaders and traditional herbalists. The study revealed that indigenous medicine, knowledge and healing by traditional herbalist were acquired through special training and ancestral calling. Findings of the study also revealed that the advanced technology in the health sector have also challenged society to be less dependent on the indigenous health care practices. It is important to mention here that the indigenous health care services have also taken a twist due to environmental changes as a way to survive in the change of time. The latter is now more inclined to religious therapy of healing than herbal remedy in consultation to traditional healers. As a conservative measure of the depleting medicinal plants, most indigenous plants which provide medicinal remedy have been depleted due to environmental changes but some have been preserved by way of planting or growing them for both medicinal and food.

Keywords: Indigenous, environment, medical practices, Qualitative, Africa, medicinal, herbalist

INTRODUCTION

The survival of any group of people or a species of living organisms is dependent on its knowledge about their environment or habitat and its ability to deal with the different challenges that confront it. To humans, one of the key components of life which threatens the existence of a group is health; therefore, each group pays close attention to the preservation and development of its medical systems. In Africa, traditional medicine and its practitioners occupied an important and enviable position in every society due to the importance placed on health. It is important to lay the foundation with an adequate understanding of what traditional medicines are its various components and the changes it has undergone over time through contact between Africans and the rest of the world.

Twumasi (1975) defines traditional medicine as “the service performed through the utilization of magical-religious acts and concepts.” Though he adds that traditional medical practitioners have notions of physical cures and treatments, he purports that one cannot talk about traditional medicine without reference to magical-religious therapies. This, show the importance placed on the traditional knowledge system on the health care system in Africa. Adu-Gyamfi (2017), describe indigenous healthcare system as “diverse health practices, approaches, knowledge and beliefs incorporating plants, animal, and or mineral based medicines, spiritual therapies, manual techniques and exercises applied singularly or in combination with other things to treat, diagnose and prevent diseases.” They note that the health of an individual in the African setting has a link with the metaphysical and the supernatural world, leading to the need for society to address both natural and supernatural forces, therefore African pharmacological knowledge system and practices mostly appeals to both

natural and supernatural elements. Therefore, traditional medicine "involves the collecting, conserving, utilizing and the application of medicinal plants for cures, prevention and promotion of physical and spiritual well-being of people. The knowledge of conservation of the sociological world and metaphysical forces of the environment is critical for the sustainability of mankind. This is the reason why Africans have a unique way in which they diagnose and treat illnesses.

WHO (2007) defines traditional medicine as "the sum total of all the knowledge and practices, whether explicable or not, used in diagnosis, prevention and elimination of physical, mental or social imbalance and relying exclusively on practical experiences and observation handed down from generation to generation, whether verbally or in writing. In contemporary times, traditional medicine is medicine, which appeals to both natural (herbs, roots, animals, spices, oils, etc.) and supernatural elements accepted by the society. African medicinal processes are embedded in the African indigenous knowledge systems (AIKS), which can be defined as "any understanding rooted in local culture." It is important to note that this indigenous knowledge system varies across different sections of society that informs its interpretations (Kasebula, 2021)

Different scholars have defined traditional medicine in different ways however, what these definitions and explanations have in common is the acceptance of the fact that indigenous traditional medicine is medicine produced out of the indigenous knowledge system of Africans using natural products such as parts of plants, animals, spices and spiritual resources such as spirits of the ancestors, beliefs and accepted practices of the societies in Africa.

Statement of the problem

African medical practices are at risk of fading because of the impact of climate change and modern medical facilities. Yet, there is an insufficient determination from national and organizational institutions to capture this knowledge of indigenous medical care system. There are no clear policies and efforts by government and other stakeholders in trying to preserve the African Indigenous Knowledge System (AIKS) on indigenous pharmacological treatment of illnesses in the prevailing situation of climate change and environmental changes. Therefore, this study sought to highlight on the effects of climate change on traditional medical care services and identifying preservation interventions of indigenous medical Knowledge.

Study objectives

1. To establish the effects of climate changes on the traditional medical care services
2. To analyse how the African Indigenous Knowledge System on medical care services is adapting to the impact of climate change on the environment.

Significance of the study

The significance of the study is that the findings of this study may help medical practitioners and governments to value African indigenous medical care services and pass legislative laws that can safe guard the environmental degradation due to climate change and human activities. The suggestions on the preservation of important tree or plant species used for medicinal purposes can be enhanced.

LITERATURE REVIEW

The history of indigenous medical practices in Zambia

The Bantu people have most beliefs and traditional practices in common regardless of their region of habitant and Zambian indigenous medical practices are not different from some medical practices done in other regions of Africa. In pre-colonial era, most Zambians depended much on the traditional therapies for healing and medical consultancy from the traditional medical practitioners popularly known as the Ng`anga, herbalists, and witchdoctors. The administration of medicine under the traditional pharmacopoeia meant to drink the herbal concoction or ingested through inhalation, vaccination (dermal incisions), bathing or fumigation. Healing is believed not only to be dependent on medicine, but a totality of healing experience between the healer, patient and supernatural forces, this included the payment of a charge either monetary form or materially to appease

the spirits for the healing revelation. The payment is in two fold, consultation fee and the actual payment as the medicine is administered to the patient.

Scholarly discussions define traditional medicine as the sum total of knowledge, skills, and practices based on the theories, beliefs, and experiences indigenous to different cultures that are used to maintain health, as well as prevent, diagnose, improve or treat physical and mental illness. In Africa, most people associate traditional medicine with herbs, remedies (umuti) and the advice of the sangomas or Ng`anga. In the West African context, traditional medicine includes not only herbal medicine for specific diseases, but also folk knowledge, traditions and values, health behavior rules and patterns, and identified personnel and structures for delivery and restoration therapy. North and East Africans have a similar concept of medicine. Earlier Egyptian medicine relied on experimentation and observation augmented by magic. They made extensive use of herbs and spice such as garlic, onion, frankincense, mandrake and other food such as honey, fresh meat and breast milk for medicinal purposes. They were experts in embalming, the use of aromatics and herbs to preserve flesh for thousands of years and also the use of infusions to extract oils from aromatic plants (Konadu, 2019). Essentially, a traditional healer is a "person who is recognized by the community in which he lives as competent to provide health care by using vegetable, animal and mineral substances and certain methods based on social, cultural and religious background as well as on the knowledge, attitudes and beliefs that are prevalent in the community regarding physical, mental and social well-being and causation of disease and disability

Konadu (2019) confirms this by stating that herbalist had their gods on whom they relied for the healing of their patients. Herbal knowledge was usually the preserve of a kins group, especially among the elderly women and men. Mostly, this type of knowledge is passed on to them by the previous generations or ancestors and was jealously guarded within the kin group. Mode of transmission of such knowledge was oral, mostly based on relationship between the young and old, who are the repository of ancient wisdom. Younger members of the family who exhibit signs of healing are put under rigorous apprenticeship sometimes for a period of 3-4 years before they are allowed to practice on their own. According to Twumasi (2014), a novice enters into training school after he has experienced possession by some spiritual influence. He may hear a voice and subsequently fall down in a fit or go into a trance. It takes a trained traditional practitioner to interpret that such a person is being called into the practice of healing. This could in some way be likened to the Christian faith calling where people receive visions indicating their call into ministry. After approval by the person's kinsmen he/she receives formal medical training. In the Zambian traditional society, preservation of the medicinal plant species was basically done through sacred observance of the plants and taboos as a deterrent from a tree being abused that might lead to its extinction. The medical efficacy of such plants was a preserve of the traditional healers. They held influential positions in society and highly respected for the role they played in society.

Currently, the traditional healing is faced with the proliferation of the spiritual prophets arising from some Christian churches. These claim to have religious or spiritual healing powers and church members of such churches and none members go to them for healing and consultancy on some ailments. The concept is not very different from that implemented by the traditional healers. The prophets also use some herbs from some trees, and compel patients to pay some money for thanks giving to the deity for providing healing. However due to the influence of Christian churches and other religions present in Africa and Zambia in particular, most traditional medical practices have since gone in oblivion and superseded by spiritual healing of faith through prayers.

The environment has a strong influence on the make-up of cultures medical floras. Traditional medicine is part of the larger indigenous cultural knowledge system passed on from one generation to the other. The majority of Africans heavily depend on traditional/indigenous knowledge system for their sustainability of their livelihood; however this dependence is being affected by the impact of climate change on the environment.

The impact of environmental changes on traditional medical care services

Social change can be considered as a significant alteration of social structure that is of form of social actions and interactions, including both the manifestation and consequences of such structures embodied in the rules of behavior. Human movements carried a wide spread of infectious diseases, which the traditional healers had no knowledge about. This lead to social change in the therapeutics of the Africans and has negatively impacted on

humanity. The environmental changes going on globally such as the bush fires droughts and flash floods in most parts of Zambia and other African countries such as Mozambique and Malawi. The impact of climate change is being witnessed on the environment. However, the question to be answered is that how does the environmental changes affect the traditional medical practices. The depletion of certain plant spices and animals have significantly affected the pharmacological aspect of the African medical care system.

In an effort to preserve some plants of medicinal value, such plants have been planted and cared for use either as food (vegetables) either roots or leave, Some herbalists have to move long distances to access the required herbs for therapy or treatment of illness from far places. This results in a high cost on the part of a patient to pay for treatment.

PRESENTATION/DISCUSSION OF FINDINGS

Imminent climate change has brought about drought in some parts of Zambia. The drought situation has led to the extinction of some plant species, which were very vital for medicinal purposes (Saslis, 2014). Society has never been the same as people are forced to migrate to new places and establish themselves in search for food and farming land. Climate change has also brought about floods in some regions of Zambia. The floods have diverstated human settlements and also the natural habitat. Forestry and soils have been significantly affected in the sense that some shrines where traditional medical practitioners operated from have been washed away by floods, disturbing the spirits that presided over the healing therapies. Vansina (2014) acknowledges the impact of environmental changes to the inhabitants of the rainforests as a result of civilization and other economic activities that disturb the welfare of the forest dwellers as he referred to them.

Some economic activities such as charcoal burning have also lead to deforestation. Different types of trees have been cut down for charcoal, a practice that have significantly affected the operations of the herbalist and traditional medicine practitioners as they can hardly find some herbs for medicinal purposes. Not only that but also some tree species used for medical purposes have depleted as a result of cutting for export as timber. The efficacy of traditional medicine depends on the indigenous healers' knowledge of the type of illness, patients' knowledge of illness, whether or not patients' body and blood accepts the medicine, contamination of medicine, supernatural meddling with medicine, taboos associated with medicine, proper use of the medicine, combination of the medicine, mind of the healer, following the rules of payment, and preparation of medicine. In essence, healing does not simply depend on the medicine employed but a totality of healing experience between the healers, patient and supernatural forces. Similarly, healing in Africa is an embodiment of the entire social process and involves not just the healer and his/her medicine but social relationships.

The insurgent of new types of diseases as a result of environmental changes such as extreme high temperatures and extreme carbon emissions to the ozone layer have put human beings at high risk of some diseases such as high blood pressure and diabetes etc. These diseases have become a challenge in the sense that most traditional practitioners have no knowledge on how to treat such ailments by traditional remedies as they are new phenomena in the African context.

Economic developments have also caused some environmental changes that in turn have also affected the traditional medical practices. Some forests which were a preserve for herbs and other medicinal staff have been developed into modern settlements with new structures. These developments such as road construction and new settlements have scared away the spirits that resided in those forests and helped in the healing process in times of need. Therefore some medical practices that used to take place in those areas can no longer be performed.

Adu-Gyamfi (2017) also identified the various categories of traditional healers as the Indigenous Priest Healer (IPH), herbalist, Traditional Birth Attendants and other specialised non-herbal medicine practitioners like bone-setters, spiritual healers among others. All of these draw on both the spiritual and natural causation of disease which forms part of the African traditional philosophies and world-views. The herbalists tackle the physical ailments such as fever, rheumatism, intestinal disorders, parasites, lactation deficiency, earache, toothache, headache, epilepsy, menstrual disorders, using plant leaves, stem, root, and bark of trees, parts of animals, ginger and other substances of natural origin. Most of the African pharmacopoeia under discussion

here may be drunk as herbal concoctions, or may be ingested through inhalation, vaccination (dermal incisions), enemas, vaginal infusions, massage, bathing, or fumigation, in forms that include powders, porridges, soups, ointments, smoke fumes, or eye drops. Below is some of the tree species used for pharmacological purposes by some traditional healers as they offer health care services to people in different regions of Zambia.

Some tree species and their pharmacological value to some tribes in Zambia

TREE /MEDICINE/PRESCRIPTION	NAME OF TREE/ANIMAL	USE	TRIBE
Mululwe (makwa, pound the barks after drying them and use the powder to make porridge for the patient to eat)	Mululwe	To cure diarrhea and stomach pains	Tonga
Barks and roots of Muchenje tree	Muchenje	Cure for kids	Tonga
Fiber of Musamba tree	Musamba	Stomach pains	Tonga
Leaves of mulamani	Mulamani	Cure for acute stomach pains	Tonga
Chiteta pounded dry roots (powder form)	Chiteta	Diarrhea and Anal sphincter muscles	Nsenga
Barks (Makwa a mutimba mvula)	Mutimba mvula	Cures septic sores and other ailments	Tonga
Boiled leaves of Mukuyu tree	Mukuyu	Blood supplement	Tonga
Boiled roots of Mutunga mphanzi (cooled water)	Mutunga phanzi	Cleanses a woman who has a miscarriage and also cures chronic coughs	Nsenga
Roots of Mulilila (soak in water)	Mulilila	Cures Syphilis	Tonga
Roots of Nembwa (sork in water and drink the water	Nembwa	Cures Syphilis	Nsenga
Kalibe kantu	Kalibe Kantu	Cures heart disease	Nsenga
Mwanya (cut roots into small pieces, soak in water and drink the water/ Chew and swallow the sap	Mwanya	Sex booster for men	Nsenga
Muchaba (cut roots into pieces and boil them, let it to cool and drink the water	Muchaba	Blood booster	Lozi
Mufofo (soak the roots and boil after cooled drink the water	Mufofo	Cure diarrhea and stomach pains	Lozi
Mupitipiti (Soak the roots in water and use the water to prepare porridge	Mupitipiti	Used by women for temperature regulation	Lozi
Mwanyi (dry roots and pound into powder	Mwanyi	Sex enhancer for men	Lozi
Mwikalamene (pound the roots and use the powder to make porridge and also add the powder into body lotion	Mwikalamene	Energy supplement for children	Lozi
Mupatupatu (insert a needle to the tied roots then soak them and use the water to make porridge)	Mupatupatu	Treatment of Pneumonia	Lozi
Kakolalumwe (soak roots and drink the water	Kakolwalumwe	Energy booster for men	Lozi
Mukusi pounded barks and make porridge	mukusi	Cure for diarrhoea	Lozi
Mafuta yansato (Python and Crocodile fat) apply on the affected area	Nsato/Ntale	Cure for infections and sores	Chewa/ Tonga

Source: field work (Kasebula 2025)

Due to centuries of practice, evolution and experimentation, well established traditional doctors have a unique understanding of physiology, pathogenesis, pharmacology and pharmaceuticals, which are different from

western biomedicine. The traditional healers have immense knowledge on different ailments and an epidemiological situation that people suffer from, it is therefore important that this African knowledge system on medical care is preserved (WHO:2024). Efforts have been made by international organizations to advance traditional medicine scientifically in order to make it a potent alternative medicine to western/biomedicine. At the WHO Forum on Traditional Medicine in Health Systems held in Harare in 2000, the African Regional

WHO office expressed keen interest in the mass production of phytomedicines for the treatment of malaria, AIDS, and other diseases identified as priority diseases by member states. It is a strategic objective of the WHO to develop a framework for the integration of traditional medicine into national health systems. The idea is to encourage local industry to invest in the local production of indigenous medicines and make them commercially viable. Governments were urged to create policies related to conservation, safety and toxicity, and regulation in order to assist a local production industry. However due to change of time, climate change has impacted negatively on the traditional medical care system.

CONCLUSION / RECOMMENDATIONS

After a rigorous review and data analysis, the study has revealed that climate change has negatively affected the traditional medical care systems as some of the plants used for medicinal purposes are no longer available due to floods, extreme high temperatures and droughts. Further still the study revealed that there are no deliberate policies aimed at reservation of medicinal plants and promotion of traditional medical care. Therefore, it is important for advocacy by health organizations to promote traditional pharmacological treatment of some diseases. Scientists and researchers can tap into the African Indigenous Knowledge System (AIKS) to enhance their research in order to discover treatment of certain diseases as informed by traditional healers.

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