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Navigating the Challenges of Integrating African Herbal Medicines: A Path to Universal Acceptance

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Abstract

Herbal medicine, deeply rooted in indigenous knowledge, presents a longstanding approach to global healthcare, particularly in Africa. This review comprehensively explores the holistic nature of Traditional and Complementary Medicine (T&CM), specifically emphasising the significance of herbal medicine. Despite its long-standing use and efficacy, herbal medicine faces challenges in universal acceptance and integration into mainstream healthcare systems. Factors influencing acceptance, from inadequate standardisation to societal stigma, are examined comprehensively. Understanding the motivations behind herbal medicine usage, including prevention, curiosity, and natural beliefs, is crucial for shaping future healthcare policies and comprehending public attitudes. Global initiatives, exemplified by the WHO Global Centre for Traditional Medicine, and national endeavours in countries like Nigeria and Ghana, underscore collaborative approaches. The review concludes by emphasising the necessity of addressing divergent stakeholder perspectives for effective integration. Proposed strategies involve collaborative research, international endorsements, adverse-event reporting systems, governmental support, inventorying, botanical gardens, testing laboratories, standardised dosage norms, and education initiatives. These measures aim to seamlessly integrate traditional medicine into mainstream healthcare, promote evidence-based practices, and enhance regulations—crucial steps toward fostering acceptance. Addressing challenges and fostering acceptance is imperative for ensuring the safe and effective utilisation of traditional medicines, thereby enhancing healthcare outcomes and overall well-being globally.

Keywords: Herbal Remedies, Integrative Medicine, Traditional Medicine, Complementary Therapies

Introduction

Traditional medicine (TM) is the world's oldest approach to health care, and it is used to prevent and treat disorders of the mind and body. Throughout history, numerous communities evolved various beneficial therapeutic strategies to tackle a variety of health- and life-threatening disorders. TM is also known as complementary and alternative medicine (CAM) or ethnic medicine, and it continues to play an important role in many nations today (Yuan et al., 2016; Bhardwaj et al., 2018; Singh & Bindhu, 2019).

Traditional medicine, encompassing herbal medicine, is a holistic approach based on indigenous knowledge, skills, and practices. The

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World Health Organization (WHO) defines traditional medicine as the sum total of knowledge used for health maintenance, disease prevention, diagnosis, improvement, or treatment of physical and mental illnesses (Moshinsky, 2022). TM being practised today entails Traditional Chinese Medicine (TCM), Traditional African Medicine, Ayurveda, Siddha, Kampo, Traditional Korean Medicine (TKM), and Unani. TM uses natural products and has been practiced all over the world for hundreds or even thousands of years, blossoming into orderly-regulated medical systems (Yuan *et al*., 2016; Gakuya *et al*., 2020). Although, some treatments contain animal parts and minerals, African traditional medicines are primarily plant-based (Che et al., 2017; Nugraha et al., 2020). Herbal medicine uses plant-based compounds for prevention or therapy (Ezekwesili-Ofili & Okaka, 2019; Nugraha *et al*., 2020), drawing from a diverse range of medicinal plants and cultural beliefs.

In Traditional and Complementary Medicine (T&CM), the use of herbs is the primary and most essential medicinal strategy. Aside from being utilised as therapeutic medications, herbs can also be employed to create medical diets, referred to as dietary therapy. Herbs contain minerals that are necessary components of a healthy human diet, in addition to several primary and secondary metabolites that influence nutrition and human health. Secondary metabolites are not only crucial for the general development or functioning of plants, but these compounds present biological activity that makes them very useful as ingredients to formulate traditional and modern medicines (Che et al., 2017; Samtiya et al., 2021; Khalil et al., 2022). The adverse effects of contemporary drugs, the rising prevalence of microbial resistance, dissatisfaction with the outcomes of current treatments for chronic illnesses, and various other factors have led to a significant increase in the use of herbal products in recent years (Welz et al., 2018). It is believed that traditional medicine provides almost 75% of the plant-based pharmaceutical entities used worldwide. Approximately 70% of current drugs in India are discovered from natural resources, and a lot of other synthetic equivalents have been developed from model compounds extracted from plants. It has been claimed that more than 60% of cancer drugs in the market or in development are based on natural materials (Sen & Chakraborty, 2017; Welz et al., 2018).

Despite their effectiveness and widespread usage, herbal and traditional medicines face challenges in achieving universal approval and integration into mainstream healthcare. This review therefore explores the factors influencing their acceptance and suggests essential strategies to promote their approval. It also sheds light on the necessary regulations for the safe and effective use of herbal medicine to enhance overall health outcomes.

Features of Traditional and Complementary Medicine

Traditional medicine takes an all-encompassing strategy to disease prevention and treatment, combining a variety of therapeutic methods such as herbal treatments, acupuncture and dietary therapy. A significant subgroup is herbal medicine, which is based on plant-based compounds known for their medicinal effects. These behaviours are strongly founded in cultural ideas and are often passed down orally from generation to generation (Che et al., 2017; Rizvi et al., 2022). The holistic nature of traditional medicine addresses not only physical ailments but also mental and spiritual well-being.

Additionally, T&CM is a valuable and frequently underappreciated health resource with a wide range of uses, particularly in the management and prevention of chronic diseases linked to a particular lifestyle and in addressing the health requirements of an ageing population (Nugraha et al., 2020). TM is a significant part of healthcare and is culturally ingrained in the routines of many individuals. In some cases, especially in rural regions, it is the only accessible or affordable kind of healthcare (Park & Canaway, 2019). According to reports, T&CM serves as the main form of healthcare in Africa since the continent's population generally lacks access to and the financial means to pay for westernize conventional medicines (Keene et al., 2019; Li et al., 2020)

Reasons for Acceptance of Traditional and Complementary Medicine

Mondal et al. (2021) and Teow et al. (2021) have reported that T&CM is extensively utilized by approximately half of the population in various industrialized countries. This widespread adoption is linked to the notable satisfaction levels among users and their assertions of experiencing an elevated health status.

The prevalence of the use of traditional medicine and complementary and alternative medicine (TCAM) is as follows: in the United States, it stands at 42%; in Australia, it reaches 48%; in France, the figure is 49%; Canada reports a high usage rate of 70% (Figure 1). Moreover, substantial adoption is observed in numerous developing nations, including China at 40%, Chile at 71%, Colombia at 40%, Cambodia ranging from 40% to 50%, and in certain African countries, the rate can go as high as 80% (Figure 1)

a. *Accessibility*: TM provides a convenient and inexpensive healthcare alternative in areas where access to contemporary healthcare is restricted. Its accessibility is demonstrated by the fact that traditional healers in Africa have a lower population ratio (1:500) than medical doctors (1:40,000) (Anjorin & Hassan Wada, 2022).

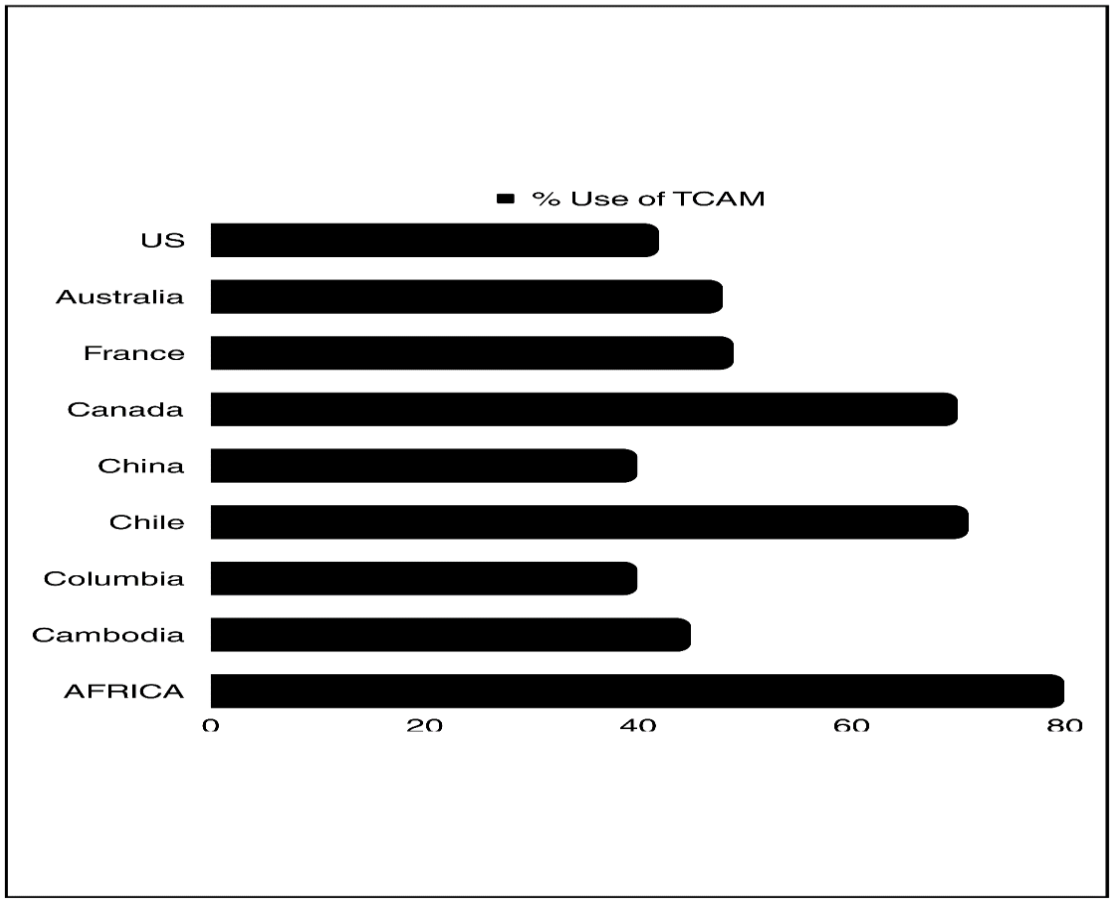

Figure 1: Percentage Use of Traditional, Complementary and Alternative Medicine (TCAM). **Source**: Mondal *et al*. (2021)

b. *Cultural Significance*: Cultural legacy is profoundly rooted in traditional behaviours, which promote acceptance and trust among communities. Herbal medicines are widely accepted and used due, in part to cultural beliefs and traditions (WHO Report, 2019; Gakuya et al., 2020).

A systematic review on the major motivations for CAM usage by Keene et al. (2019) highlights that 51% of cancer patients use CAM (Figure 2). The primary motivation reported was to 'treat or cure cancer' (73.8%), followed by addressing side effects (62.3%), holistic needs (57.4%), influencing overall health (55.7%), taking personal care responsibility (45.9%), recommendations from others (34.4%), and having faith in CAM (34.4%).

c. *Effectiveness*: Taking Nigerian herbal medicine as an illustrative example, TM has proven effective in treating various ailments, particularly through the use of indigenous medicinal plants. Despite advancements in pharmaceuticals, Nigerians predominantly rely on herbal remedies, emphasising the enduring significance of

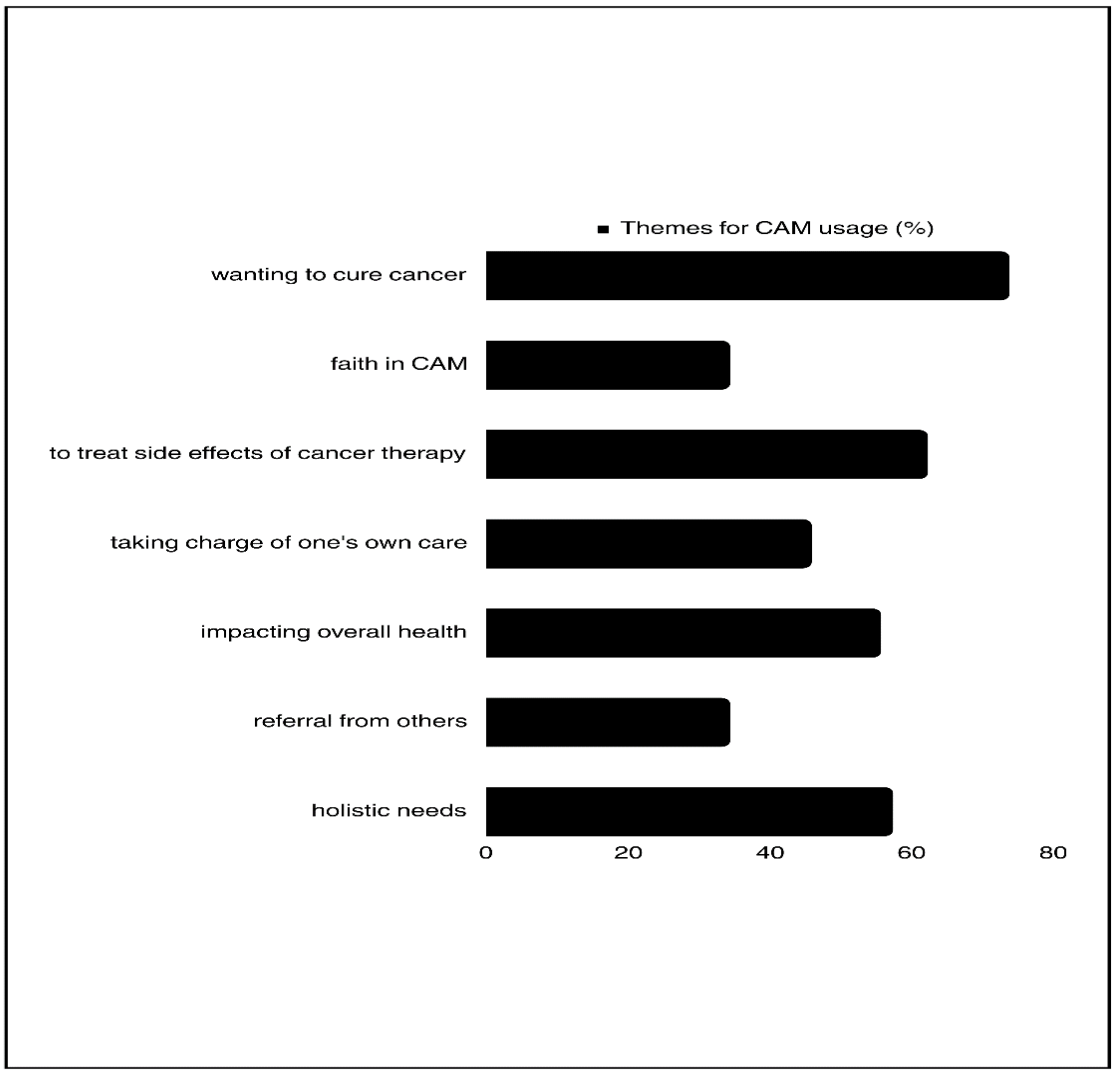

Figure 2: Reasons for the Use of Complementary and Alternative Medicine (CAM).**Source:** Keene *et al*. (2019)

traditional medicine in the region (Ezuruike et al., 19; Siddiqui, 2021; Abubakar et al., 2022). Beyond therapeutic applications, Nigerians incorporate medicinal plants into cosmetics and perfumery. Certain herbal remedies have demonstrated efficacy in treating specific skin conditions, highlighting the versatile nature of traditional medicine. Notable plants like *Aspilia africana* and *Bryophyllum pinnatum*, abundant in bioactive constituents, vitamins, and minerals, play pivotal roles in the realm of ethnomedicine in Nigeria (Ajose, 2007; Abubakar et al., 2022).

The therapeutic potential of Nigerian medicinal plants, including *Pseudocedrela kotschyi* and *Garcinia kola*, is emphasized by the substantial presence of essential phytochemicals such as alkaloids, phenols, flavonoids, saponins, essential oils, and tannins (Temitope & Olugbenga, 2015; Uwimbabazi et al., 2023). In the light of these findings, the utilisation of medicinal plants, with their diverse therapeutic compounds, persists as a prevalent and endorsed practice in healthcare.

d. *Holistic Approach*: Holistic healing is provided by TM, which treats emotional and spiritual, in addition to bodily problems. This all-inclusive strategy appeals to people looking for holistic medical solutions.

Also, Van Andel & Carvalheiro (2013) stated that the use of CAM was driven by curiosity, sickness prevention, and the belief that CAM, in conjunction with traditional treatment would be beneficial. CAM use appears to be linked to a holistic or spiritual perspective on health as well as the conviction that herbs are natural and hence harmless.

Challenges of Acceptance of Traditional and Complementary Medicine

1. Risks Associated with Preparation and Use of Traditional and Complementary Medicine

Inadequate Standardization and Quality Control: A notable concern revolves around the absence of standardised dosing in herbal remedies. The lack of universally accepted or regulated amounts of active ingredients creates the potential for inconsistent therapeutic effects, introducing the risk of both under-dosing and over-dosing. This variability compromises the safety and efficacy of the treatment (Antwi-Baffour et al., 2014; Singh & Bindhu, 2019)

Additionally, the inadequate implementation of robust quality control procedures in traditional medicine gives rise to apprehensions. The inconsistency or insufficiency of quality control measures may lead to variations in the composition of herbal remedies, posing potential dangers such as contamination and unpredictable therapeutic outcomes.

Adherence to Good Manufacturing Practices (GMP) is crucial to ensuring the quality and safety of pharmaceutical products, including herbal medications. However, TCM practices may not consistently adhere to these standards, leading to potential compromises in safety and efficacy (Che et al., 2017).

Adulteration and inaccurate plant identification further contribute to the risks associated with herbal medications. Adulteration, driven by economic motivations, can introduce substances not listed on the product label, while incorrect plant identification may lead to unintended side effects or inadequate therapeutic effects (Singh & Bindhu, 2019; Koonrungsesomboon et al., 2021).

Suboptimal collection and preparation methods, including issues such as poor harvesting practices and improper drying and storing of herbs, can result in the degradation of active compounds, impacting the overall quality of herbal remedies (Bhardwaj et al., 2018).

Additionally, improper formulation processes can affect the therapeutic efficacy of herbal medications. Without standardised practices, variability in the composition of herbal remedies becomes a significant challenge, potentially leading to ineffective products or unexpected interactions between different herbal components (Sen & Chakraborty, 2017; Ezekwesili-Ofili & Okaka, 2019).

Adverse Reactions and Side Effects:

Studies have shown the potential negative effects of some CAM treatments, such as ginseng,

ginkgo, and St. John's wort, when used in conjunction with conventional treatment, despite the fact that T&CM is frequently thought to be natural, safe, and free of side effects (Okoronkwo et al., 2014).

Hence, time is needed for proper pharmacovigilance in the herbal drug industry in order to locate toxicological data as well as adverse drug reactions. Monitoring of adverse reactions, contraindications, interactions with diet, other medications, and currently prescribed conventional drugs is necessary (Sen & Chakraborty, 2017; Parveen *et al*., 2020). The intricacy of herbal chemicals can lead to unexpected side effects, allergic responses, or combinations with pre-existing medical disorders (Bhardwaj et al., 2018).

Lack of Scientific Validation:

The lack of scientific validation for herbal medicines presents a substantial obstacle to their acceptance, triggering scepticism within both the scientific community and healthcare practitioners. The deficiency in well-designed clinical trials and research studies on the safety and efficacy of herbal remedies contributes to the overall limited scientific evidence supporting these traditional treatments. Without a robust body of scientific literature, it becomes challenging to establish a reliable foundation for the effectiveness of herbal medicines, hindering their integration into mainstream healthcare practices.

This challenge is exacerbated by the absence of standardised research methodologies in the study of traditional and complementary medicine. The diverse nature of these practices, coupled with the lack of consistent research frameworks, complicates efforts to assess and compare outcomes across different studies. Standardised research methods are essential for ensuring the replicability and validity of study results, and the dearth of such standards in herbal medicine research makes it difficult to draw definitive conclusions about the safety and efficacy of these treatments (Koonrungsesomboon et al., 2021; Mondal et al., 2021; Tozun et al., 2022).

Contamination Issues:

Contamination of herbal products with pesticides, heavy metals, and other hazardous compounds is a critical concern that poses substantial risks to consumer health. The sourcing and cultivation of medicinal herbs may expose them to environmental pollutants, leading to the presence of harmful substances in the final product. Pesticides, used in agricultural practices, can contaminate herbal remedies if proper cultivation and processing methods are not adhered to. Heavy metals, such as lead, mercury, and arsenic, may be absorbed by plants from the soil, further adding to the potential health risks associated with herbal medicine consumption (Fan et al., 2012; Veatch-Blohm et al., 2021).

In addition to environmental contaminants, the issue of counterfeit items and adulteration introduces another layer of risk to the safety and efficacy of herbal treatments. Counterfeit herbal medicines may be intentionally adulterated with synthetic pharmaceuticals, compromising the natural composition of the product. Such adulteration can lead to unintended side effects, potential drug interactions, or inadequate therapeutic effects. Instances of herbal medicines lacking declared active ingredients or containing incorrect ones raise concerns about the reliability and consistency of these traditional treatments (Koonrungsesomboon et al., 2021).

Moreover, there is a possibility of herbal products containing antinutrients, substances that interfere with the absorption or utilisation of nutrients in the body. While some plants naturally produce antinutrients as defence mechanisms, improper processing or formulation of herbal remedies may enhance their presence, impacting the nutritional value of the product and potentially causing adverse effects on consumers (Ezekwesili-Ofili & Okaka, 2019; Singh & Bindhu, 2019; Gakuya et al., 2020).

Societal Stigma and Discrimination*:*

The hesitancy and doubt surrounding African traditional medicine, despite its historical recognition, can be attributed to deeply ingrained cultural and social factors. While it received international and national acknowledgement

decades ago, its growth has been hindered by pervasive scepticism from both governmental authorities and the general public. This scepticism is rooted in the questioning of the knowledge and claims made by traditional medicine practitioners, creating a barrier to widespread acceptance (Gakuya et al., 2020; Sifuna, 2022).

Despite its cultural significance, Traditional Medicine (TM) is occasionally stigmatised, leading individuals to be hesitant in discussing or seeking herbal remedies. This reluctance stems from the fear of encountering negative attitudes and a perceived lack of understanding and support from conventional medicine providers. This situation fosters mistrust and perpetuates stigma, creating a challenging environment for the acceptance and integration of traditional and herbal remedies into mainstream healthcare. The cultural importance of TM clashes with the reluctance driven by the apprehension of encountering negative perceptions, contributing to a complex landscape that hinders open dialogue and collaboration between traditional and conventional medical practices (James et al., 2018; Sifuna, 2022).

A major obstacle to the growth of African traditional medicine is the prevalent lack of public information and associated scepticism. These challenges persist due to perceptions shaped by social transformations influenced by Western civilization and Christian dogma. The linking of TM to primitivism, evil, witchcraft, and black magic has been a prevailing narrative, particularly exacerbated by the influences of American and European civilization and concepts. This negative association, sometimes termed "witch medicine," has permeated societal views and contributed to hesitation in accepting TM (Ezekwesili-Ofili & Okaka, 2019).

Historically, dating back to colonial times, African TM has been unfairly intertwined with witchcraft and black magic. Despite efforts to disentangle these associations, the misperception has endured, affecting not only the development of TM but also its acceptance by governmental authorities and the broader public. Modernity, influenced by religion, especially Christianity, and societal transformations moulded by American and European concepts, further complicate the situation. In addition, figures like Jomo Kenyatta, Kenya's founding President, have publicly condemned traditional healers, labelling them as "lazy cheats" who seek to live off the efforts of others. Such attitudes persist among medical professionals and evangelical churches, condemning TM practices as ungodly. These condemnations, rooted in missionary opposition to native practices, underscore a deep-seated bias against TM practitioners (Harrington, 2015; Gathara, 2018).

Moreover, the derogatory language used to describe TM practitioners reflects a broader societal disdain. The pervasive contempt and disdain directed at TM practitioners illustrate how deeply ingrained these negative attitudes are within contemporary medical practice (Che et al., 2017; Redvers & Blondin, 2020; Sifuna, 2022).

2. Risks and Challenges Associated with Policy and Administration of Herbal Medicine

Lack of Regulatory Frameworks:

The absence of regulations and quality control standards poses a risk to patient safety when substandard or contaminated herbal products enter the market (Lenssen et al., 2019; Veatch-Blohm et al., 2021). It is necessary to improve regulatory frameworks in order to guarantee the safety and quality of herbal medicines.

Integration into Conventional Healthcare Systems:

It is challenging to bridge the gap between the traditional and contemporary healthcare systems. Integrated patient care is hampered by the lack of cooperation and communication between conventional healers and medical experts. In order to promote successful communication and collaboration between these two healthcare systems, efforts must be made (Park & Canaway, 2019).

Insufficient knowledge of TM, a discriminatory attitude toward TM, a high turnover rate among biomedical health staff, a decline in young people's desire to become healers, and a

shortage of equipment and herbs were the five main obstacles to the successful integration of TM into conventional healthcare systems, according to a study by Krah *et al*. (2018).

Intellectual Property and Cultural Preservation:

Traditional knowledge, especially herbal medicines, frequently lacks legal protection, raising worries about bio-piracy and exploitation of indigenous resources without fair remuneration (Abdullahi, 2011; Innocent, 2016). Custodians of traditional medical knowledge are currently hesitant of sharing this knowledge due to negative experiences in the past (Gakuya et al., 2020). As a result, combining the need for intellectual property rights with cultural preservation activities presents hurdles, necessitating sophisticated legislative frameworks to handle.

Public Awareness and Education:

Inadequate public awareness of the hazards and advantages of herbal medications leads to misinformed use. Limited education and training in herbal medicines for healthcare professionals and the general population results in scepticism and uncertainty in their acceptance and integration (James et al., 2018).

Other issues:

Global herbal medicine promotion is hindered by unethical practices in herbal medicine, a shortage of qualified physicians, exposure to unreliable and misleading information, insufficient funds, an absence of clinical trials, a lack of focused marketing and branding, a lack of exchange of information and secrecy (Ezekwesili-Ofili & Okaka, 2019). Other significant challenges include the lack of conservation of biodiversity and the protection of traditional medicinal plants (Sen & Chakraborty, 2017; Gakuya *et al*., 2020).

To tackle these obstacles, all-encompassing regulations, global cooperation, strict quality assurance protocols, and public education campaigns are necessary. Societies can improve acceptance and safe use of herbal and traditional medicines by bridging regulatory gaps, stimulating research, and encouraging communication between contemporary healthcare practitioners and traditional healers.

Practical Strategies for Regulating and Enhancing Collaborations in the Implementation of Herbal Medicine Practices

- Establish a comprehensive regulatory framework and collaborative platform, similar to the Traditional Chinese Medicine Systems Pharmacology (TCMSP), that integrates information on pharmacochemistry, Absorption, Distribution, Metabolism, and Excretion (ADME) properties, drug-likeness, drug targets, associated diseases, and interaction networks for herbal medicines. This initiative should include the incorporation of Chinese herbal medicine into regulatory frameworks, encourage collaboration between modern medicine and TM practitioners, enforce regulations for the standardisation and quality control of herbal medicines, actively promote research and drug discovery efforts focused on herbal medicines, foster the development of new drugs based on insights gained from studying herbal medicines, and secure government support for the development and integration of TM practices, potentially through the establishment of dedicated centres or institutions (Ru et al., 2014).
- To enhance collaboration and integration in TCM research, the EU-funded GP-TCM initiative focused on investigating registration requirements for TCM products across global regulatory bodies. The initiative, particularly under Work Package 7, aimed to compile and compare data on existing regulations. This effort contributes to understanding and addressing regulatory variations, fostering international cooperation, and streamlining the registration process for T&CM products on a global scale (Fan et al., 2012).
- In a move to strengthen alternative medicine practice in Nigeria, the Federal

Executive Council (FEC) approved the establishment of the Council for Traditional, Alternative, and Complementary Medicine Practice. This decision aims to safeguard the intellectual property rights of practitioners, elevate the profile of T&CM, and institutionalise its practice, drawing inspiration from models in countries like China and India (Ailemen, 2020).

- In Ghana, the health system is structured to strongly support the orthodox health system, while the traditional health system, although popular, receives comparatively less backing from policymakers. The country embraces an inclusive health system, recognizing TM as a medical system with a dedicated policy to regulate its practice. The Traditional Medicine Practice Council (TMPC) and Ghana Food and Drug Authority (FDA) were established to license/register TM practitioners and regulate their activities. A Centre for Scientific Research into Plant Medicine aims to enhance TM practice by scientifically authenticating the quality and safety of TM products. Additional interventions involve the creation of the TM department at the Kwame Nkrumah University of Science and Technology (KNUST), training professionals in TM practice, and the establishment of TM units in select public hospitals. These efforts seek to enhance the credibility of TM in the health system and promote the preservation of indigenous medical knowledge (Ampomah et al., 2023).
- The WHO Global Centre for Traditional Medicine (GCTM) is being established as a knowledge centre for TM, focusing on evidence, learning, data analytics, sustainability, and innovation. With support from the Government of India, the Centre aims to optimise the contribution of TM to global health and sustainable development. Recognising the widespread use of TM, especially herbal medicines, acupuncture, yoga, and indigenous therapies, the GCTM responds to the priority request from 170 Member States for evidence and data to inform policies and regulatory frameworks. India, as the lead investor, has committed approximately US$ 250 million to support the GCTM's establishment, infrastructure, and operations, including a new building in Jamnagar, Gujarat. The GCTM will serve as an accessible, eco-friendly facility showcasing global traditions and modern scientific advances in TM, addressing knowledge needs and augmenting WHO's capacities in this field. During the construction phase, an interim office will be set up at the Institute of Teaching and Research in Ayurveda (ITRA), a WHO Collaborating Centre and Institute of National Importance (Krishnan, 2023).

In summary, facilitating the integration of herbal medicine involves establishing a regulatory framework like the TCMSP. This approach encourages collaboration between modern and traditional practitioners while ensuring stringent quality control. The EU-backed GP-TCM initiative contributes to global collaboration by examining registration requirements. In Nigeria, the Council for Traditional, Alternative, and Complementary Medicine Practice is established to strengthen alternative medicine, taking cues from successful models. In Ghana, there's a push for an inclusive health system, recognizing TM through regulatory bodies and scientific validation. Led by India, the WHO Global Centre for Traditional Medicine strives to optimise global health contributions with a significant investment of US$ 250 million. Despite these efforts, the integration of TM into mainstream healthcare systems reveals a challenging dynamic marked by a "power struggle" between TM and orthodox health practitioners. TM advocates emphasise retaining control and propose local collaborations, while orthodox practitioners lean towards incorporating TM under formal health system direction (Ampomah et al., 2023). Addressing these divergent perspectives is crucial for effective TM integration globally, requiring exploration of key stakeholders' views on the level

and quality of integration to uncover potential benefits and drawbacks.

Way Forward

Collaborative Research:

1. Establishment of collaborative research: To execute sound research designs and work toward shared objectives, collaborative relationships should be promoted between researchers, institutions, and governments worldwide.
2. International research agreements: To promote collaboration between various scientific communities and support international research agreements that place emphasis on a shared language and set of goals.
3. Adverse-Event Reporting Procedures: Establishing reliable and impartial protocols for reporting adverse events specific to herbal remedies is crucial. Thoroughly tracking adverse events not only facilitates the determination of the risk-benefit ratio in herbal medicine research but also addresses concerns related to immune-compromised individuals. Given their heightened sensitivity and potential for unique reactions to certain substances, it is imperative to implement a comprehensive adverse-event reporting system. This system should be meticulously designed to capture and analyse any negative effects experienced by individuals, particularly those with compromised immune systems, following the consumption of herbal remedies. By doing so, we enhance our understanding of the safety profile of herbal medicine and provide valuable insights for informed decision-making, particularly in vulnerable populations.

Government Support and Investment:

1. Institutional and financial assistance: To encourage the possible role of TM in the provision of primary healthcare, governments should offer the appropriate institutional and financial assistance. Provide funds to help with herbal medicine-related research, instruction, and conservation initiatives.
2. Inventory and documentation: A list of all of the herbs and plants that are utilised medicinally in each nation to treat common ailments should be generated. Preserving this knowledge through documentation will support future research and maintain conventional wisdom.
3. Botanical gardens: Creation of nearby botanical gardens to protect vital herbal remedies would be of advantage. These gardens will guarantee a steady supply of therapeutic herbs that are secure, efficient, and reasonably priced.
4. Testing laboratories: There should be establishment of testing laboratories with sufficient equipment to evaluate the effectiveness of therapeutic herbs. Consistency in the assessment of herbal extracts will be ensured by standardised testing procedures.
5. Dosage norms: Dosages should be standardised to improve the safety and efficacy of herbal medicines. This will help to determine the most effective way to use herbal extracts in different routes of administration.

Education and Awareness:

1. Integration into school programs: Instruction on TM and biodiversity protection should be included in school curricula. Teaching the next generation will help them appreciate the benefits of herbal remedies and biodiversity preservation.
2. Public awareness campaigns: Holding public awareness campaigns to educate the public about the advantages and disadvantages of using herbal remedies is of essence. Open communication will increase public acceptance and trust.

By putting these suggestions into practice, joint efforts, official backing, and public awareness can ensure that herbal and traditional medicines are

integrated into international healthcare systems and open the door to widespread acceptance.

Conclusion

It takes a team effort from academics, legislators, and healthcare professionals to address the issues surrounding the acceptability of herbal remedies worldwide. An important step in creating acceptance is to respect indigenous knowledge, improve rules, encourage research for evidence-based methods, and integrate TM into mainstream healthcare. Better healthcare results and general well-being are promoted by these initiatives, which are crucial to ensuring the safe and efficient use of traditional and herbal medicines in a variety of settings.

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Conflicts of Interests

The authors declare no conflicts of interests.

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