



Integrating Herbal Medicine into Public Health Policy for Disease Management

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ABSTRACT

Herbal medicine remains a vital component of health care for many communities worldwide, particularly in managing chronic diseases. Despite its longstanding cultural relevance and growing global demand, the integration of herbal medicine into formal public health policies remains fragmented. This paper examines a foundational strategy to embed herbal medicine into public health policy using a community-based participatory approach. The historical context, current trends, and global case studies are examined to understand the socio-political and regulatory challenges and opportunities. The study emphasizes stakeholder engagement, ethical considerations, and evidence-based practices as essential pillars for successful policy integration. While acknowledging the complexities, this research advocates for inclusive health systems that respect traditional practices, ensure safety and efficacy, and align with public health goals. Ultimately, it offers a model for harmonizing traditional and modern healthcare frameworks to promote sustainable and culturally-sensitive disease management.

Keywords: Herbal Medicine, Public Health Policy, Chronic Disease Management, Traditional Medicine, Integrative Health, Stakeholder Engagement.

INTRODUCTION

Herbal medicine is one of the earliest forms of health care used by human beings. It has a remarkable history of their use and is still pervasive in communities even in this modern era. In a recent brainstorming meeting, it was discussed how to formalize and regulate herbal medicine use for health management in such communities. The goal of this preliminary study is to lay a foundation for ongoing research project of integrating herbal medicine into the public health policy of disease management, especially for chronic diseases. Rather than focusing on scientific exploration, attention was put on the operational framework for effective management of herbal medicine use in the community settings. It has been recognized that the involvement of stakeholders, especially policy makers and herbal medicine users from the community, is crucial for any successful outcome. Consequently, strategies were designed to identify key stakeholders using the community-based participatory approach and effective methods to solicit their inputs, suggestions, and opinions on herbal medicine management. Potential factors affecting their engagement were taken into consideration. However, it is fully aware that this is the very beginning phase of this ongoing project, and many logistical aspects need to be defined in further detail. The hope is that it will become feasible for this small community of herbal medicine users to share their successful experience with the wider world and identify the factors contributing to successful integration of herbal medicine into public health policy for population health management. It is believed that the enactment of community policies regarding herbal medicine use would not only benefit the well-being of its members but also serve as a good model of managing traditional medicine use in general for the world community [1, 2].

Historical Context of Herbal Medicine

Only a few treatments for diseases such as the common cold, hay fever, chronic nasal obstruction, and cystitis have shown positive outcome in double-blind placebo-controlled clinical trials. On the other hand, frustrations and panic in non-curable diseases such as common warts, benign prostatic hyperplasia,

impotence, and migraine have propelled interested parties to look for alternatives outside mainstream medicine. Sensing a profit opportunity, businesses from health food store to multi-national corporations have entered the herbal medicine market and aggressive and extravagant promotion of health food or herb-drug products has been used. As a result of the regulatory loophole between food, drug, and health products, dozens of pseudo-science products, of dubious efficacy, purity, and safety have flooded the market. Public concerns have been raised on the issue of food safety and the growing herbal pharmacy business. Concerns about inheritance of toxic herbal medicines and long wanted consumer protection have been heightened by sharpening focus on recent herb-drug interaction cases. A recent Government Green paper, with proposals, aimed at enhancing the regulation of herbal medicine and protecting public health has drawn mixed responses from the public during a consultation period. Besides the concerns, the phenomenon of herbal medicine reclaiming its prominence cannot be ignored. Herbal products obviate the need for a doctor's prescription and fill the ever-growing demand for self-medication. Public concern is matched by interest expressed by mainstream cultures in "wonder herbs," e.g., ginseng, st. John's wort, evening primrose oil, ginger, ginkgo biloba, ginseng, and chirostemon, and the many pharmaceutical companies getting into supplement production. Furthermore, the easy availability of these products raises the nether suspicion of dubious efficacy and safety, especially when used in conjunction with orthodox medicines. Why are these products so proliferated and accepted publicly? Breach of Food & Drug Regulatory requirements, overseas adoption of herbal medicines in patient management or its integration into primary care, and legislative safeguards against the loss of culture and heritage [3, 4].

Current Trends in Herbal Medicine

It is now widely recognized that herbal medicine is commonly used world-wide. Many people resort to herbal medications to promote health, prevent deterioration of health, or treat diseases when they have not been relieved with orthodox medicines. Some experts think that orthodox medicine (OM) is an allopathic treatment which aims to antagonize the disease process. Many of the complementary and alternative medicines (CAM), however, involve a holism approach. Practitioners of CAM focus on balancing different body systems and supporting the body's innate powers of self-regeneration. Thus, holistic medicine is paced from a low risk of adverse effect to a high risk, commonly available treatments. They include (1) Lifestyle relating treatments such as diet modification, exercises, and counseling; (2) Bio-energetic treatments such as chiropractic and acupuncture; (3) Natural products, including herbal medicines, nutritional supplements, homeopathy, and megavitamin therapies; and (4) Intrusive and potentially dangerous treatments such as surgery and hyperthermia. Different health care systems exist or have been developed in different cultures. Herbal or medicinal plant products have been taken as medicines to treat diseases in both Eastern and Western cultures for many hundreds of years. Most research conducted in the last eighteen years showed the safety and efficacy of many Chinese herbal remedies as new sources for the treatment and prevention of cancer. In fact, some drugs helpful in the treatment of human disorders were isolated from plants which had been used as traditional remedies for centuries. Today, over one-quarter of marketed orthodox pharmaceuticals are derived from plants and in general about 90% of the primary health care needs in developing countries are met by herbal remedies. Official and accurate estimates of herbal remedies consumed in Europe are extremely scarce. However, based on anecdotal evidence, it seems that a significant amount of herbal remedies are consumed in Europe, exceeding £300 million. Interest in herbal products is increasing by the day. Promoting the sale, formulation, distribution, and safe use of herbal products is becoming an on-going challenge [5, 6].

Public Health Policy Framework

Antimicrobials, especially antibiotics, are crucial in modern medicine, but rising bacterial resistance undermines their efficacy. Antimicrobial Resistance (AMR) worsens due to factors like over-the-counter prescriptions, poor compliance, substandard drugs, and livestock self-treatment. These issues are compounded by overpopulation, inadequate sanitation, and weakened public health systems. Research is ongoing for newer antibiotics with additional benefits, but focus should also be on preventing infections, protecting current antibiotics, and exploring natural alternatives in forests and seas. The rise of Traditional herbal medicine, especially in developing regions, stems from ease of access and low resistance compared to synthetic antibiotics. Herbal therapies can target multi-drug-resistant infections, making their regulation and integration with conventional treatments essential. Herbs have unique uses and active ingredients, supporting diverse and sustained resources without one replacing another. Herb producers, predominantly marginalized women, face various challenges. Building mutual understanding and trust could foster collaboration. Although different Indonesian herbalists have no shared origins, this diversity can be beneficial, but moral concerns persist amid unverified claims in herbal practices [7, 8].

Benefits of Herbal Medicine

The European scientific community has increasingly recognized the vital importance of Human Resource and Investment in Research & Development as essential components required for effectively mitigating future public health crises. In particular, expanding integrative health systems, with a strong emphasis on herbal medicines (HM), is deemed crucial for the overall strengthening of European health systems. Despite the widespread use of herbal medicines, they often struggle to find adequate integration into public health policies (PHPs) that are implemented across the European Union. The COVID-19 pandemic has starkly revealed the complexities and fragmentation of public health policies that exist among various EU countries, leading to urgent calls for reform. There is growing optimism regarding significant initiatives such as the European Health Union and the Green Deal initiatives, which have the potential to directly address the health effects of the pandemic. These initiatives aim to bring meaningful investments in domains like medicine, agriculture, and the environment, highlighting the potential for holistic development. This renewed focus on public health policies offers a unique opportunity to weave HM knowledge into the fabric of the health and well-being of Europeans. Advocating for the integration of herbal medicines into PHPs is particularly timely and relevant, especially given that these remedies have historically served as cultural and social connectors throughout the diverse societies and cultures that make up the EU. Nevertheless, significant barriers remain that must be dismantled if there is to be effective integration of these practices. Looking towards other countries, such as Malaysia and Japan, one can observe models of successful incorporation of HM into mainstream health systems. These nations have established national policies specifically for Complementary and Alternative Medicine, as well as Integrative Medicine, showcasing their commitment to a more holistic approach to health care. Through effective multi-sector collaboration, these countries have been able to implement these policies in a manner that resonates with their populations. Policymakers within the EU can glean valuable lessons from these examples, recognizing that a collaborative approach involving a wide range of stakeholders could lead to transformative policy changes. Such changes would ultimately elevate the importance and role of herbal medicines within the overarching framework of European health systems [9, 10].

Challenges To Integration

Many doctors and other trained professionals claim that herbal medicines are a health hazard due to unverified methods of formulation, their unregulated usage, contamination with heavy metals and/or pesticides, unsupervised preparation or exhibition of potions, mistreatment in underlying medicinal condition, and so on. Due to the absence of scientific documentation, they are unable to define the utility, safety, and dose of medicinal herbs that have been used in herbal medicine for centuries. International agencies acknowledge the poor and unexpected reactions that herbal medicines cause; they thus draw the attention of designers of national policies. The sale of herbal medicines in violation of rules and regulations is another problem. Users of herbal medicine do not hesitate to obtain it from grocery stores and other improvised stalls that offer unregulated and potentially hazardous herbal medicines. Doctors of different specialties report feeling unable to forbid herbal medicine use in view of their long and fruitful history in diseases ranging from simple cough to even seemingly intractable diseases including cancer, lupus, and palliative treatment of sickle cell anemia, particularly for people in low-income economies. Because of this huge gap in healers' options, and continued practice without proven safety, efficacy, and quality standards, it is both a moral and social duty to scientifically substantiate herbal medicines so that healthcare workers can help patients to safeguard their safety and to obtain the best therapeutic remedy for their complaints. Healers should be welcomed continuously into the healthcare system to effectively fill the gaps and offer each treatment option as a collaboration of both medicinal systems. The policymakers of health agencies should regard herbal medicine as a bona fide health option similar to conventional modern medicines. Both systems could be regulated by taking into account each sector simultaneously, on the grounds that exclusive policies bring about prejudice among the health options. This is a call for proper public health policies, along with clarifying implementation strategies, so that healing practices can mutually maximize efficacy and patient safety [11, 12].

Case Studies of Successful Integration

The case studies below illustrate how various countries have integrated herbal medicinal products into public policy, showcasing stakeholder involvement and institutional capacity that lead to greater reliance on herbal remedies. This has created a need for standards in public health systems regarding herbal medicines. The studies focus on Hong Kong, China, and the USA. In Hong Kong, a strategy was implemented to integrate Traditional Chinese Medicine (TCM) into the public health system. In 2000, the legislative council established a consultative working group to conduct a comprehensive study on

TCM's development. Utilizing focus groups and the Delphi technique, they sought input from frontline TCM practitioners regarding health policies and effective integration of TCM with biomedical healthcare. In 2003, four focus group discussions provided TCM practitioners with opportunities to share their perspectives. China has developed a health policy that outlines the roles of Western Medicine and TCM in its public health system. In recent years, the demand for herbal medicines in pharmaceutical and food industries has surged. While Western Medicine dominates urban hospitals using evidence-based drugs, TCM has gained popularity among the public, especially during critical periods like the 2003 SARS outbreak when herbal interventions were sought. In the USA, a health policy has emerged regarding the prescription of herbal remedies by mainstream healthcare providers based on their efficacy and safety. As clinical studies on black cohosh for women's health issues have increased, prescriptions by integrative medical doctors and gynecologists have grown. However, many physicians lack specialized TCM knowledge and view these herbal products as safe pharmaceuticals. In response to obesity treatment cases, PMU created and approved a health policy memo detailing preconditions and procedures for physicians to follow [13, 14].

Stakeholder Engagement

Local stakeholders in HMG are seen as those who are directly tied to the organization and have knowledge about the intricacies of the state's health systems. Affected stakeholders are individuals directly tied to HMG's ability to deliver services and gain access to public health provision. These include herbal medicine practitioners, regulatory centers, and policy makers. Influential stakeholders shape and inform the policy terrain around HMG, usually at a long distance from the field level. These are mostly local and state government actors, researchers, and those in health related Non-Governmental Organizations and Civil Society Organizations. As an initial step, potentially affected stakeholders were identified. This included organizations and individuals who may be affected by the ability of HMG to maintain or increase the services it provides [15, 16, 17, 18]. These organizations included local herb-medicine practitioners and their associations, the Ministry of Health, the Council of Traditional Medical Schools in Ethiopia, the Health Care Financing Institute, the food, medicine and health care administration and control authorities, the National Health Insurance Agency, and various NGOs. Other organizations locally affected discussed were Addis Ababa's Civil Service Commission and job creation and food security agencies, Women's Affairs Office at Addis Ababa City and the bureaucracy. Although many were identified as influential stakeholders, to provide a workable set of primary stakeholders, the list of influential local stakeholders was narrowed and categorized into organizations and individuals [19, 20, 21, 22, 23]. Government organizations included the Ethiopian Food, Medicine and Healthcare Administration and Control Authority and the Ministry of Health. Local organizations included the Traditional Medical Practitioner Association of Addis Ababa and the Consultative Council. Individuals included a Council Member of the National Health Insurance Agency, the owner of a relevant herb gardening company, a Regulation Expert at the Ministry of Health, and a health economist at the Ministry of Health [24, 25, 26, 27].

Research and Evidence-Based Practice

Despite increasing public acceptance of herbal medicine, more research is essential to assess its medical potential, safety, and efficacy for public health policy integration. Academic institutions and government agencies have made significant progress in documenting evidence, best practices, and the cost-effectiveness of various medicinal plants and traditional practices globally. However, current research lacks a strong focus on health policy and disease management [28, 29, 30]. A formal platform is needed to compile research on medicinal plants and herbal medicines for integration into public health strategies. This proposed forum aims to unify scholarly efforts in the systematic accumulation and dissemination of critical knowledge nationally for multisectoral integration into health policy. It seeks to be a synergy-building platform for academic institutions, public health bodies, civil society, and community organizations to examine the role of medicinal plants especially those recognized by WHO—in managing diseases and influencing policy, notably in China and beyond. This review also highlights science-based regulation of traditional medicine in various countries to encourage deeper exploration of this vital aspect of herbal medicine. Numerous studies have demonstrated the efficacy of Traditional Chinese Medicine (TCM) and Integrative East-West Medicine (IM) in managing chronic illnesses [31, 32, 33, 34]. Random control trials (RCTs) offer a robust method to test efficacy under defined conditions, but generalizability is challenged due to differing evaluation systems and treatment approaches. Conducting unbiased trials in TCM and IM is further complicated by fundamental differences in medical philosophy and evaluation measures. The multifaceted nature of acupuncture and herbal treatments makes strict RCT protocols

challenging. This discussion highlights the obstacles in TCM RCT studies and suggests feasible trial designs to overcome traditional RCT limitations. When strict standardization isn't possible, Whole Systems Research and Comparative Effectiveness Research designs are more suitable for assessing TCM and IM's effectiveness with minimal treatment manipulation. Observational studies with control groups may address the need for "fit-for-purpose" research, focusing on health outcomes rather than solely on treatment. Qualitative studies can illuminate underlying treatment mechanisms or alternative explanations often overlooked in TCM and IM intervention research. Given TCM and IM's holistic nature, research in integrated settings is increasingly significant as global health care systems face sustainability challenges and a demand for effective, affordable, person-centered, evidence-based management of complex conditions and chronic illnesses [35, 36, 37].

Ethical Considerations

The ethics of herbal medicine should be informed by principles and frameworks that are common and applicable to medicine more broadly. The most salient framework is that of the four values of care, respect, honesty, and fairness. Care entails acting in ways that avert injury and by considering the broader consequences of action. In the context of herbal medicine this entails that producers care for quality, provenance, and procurement of ingredients. It also entails the preservation and conservation of local environments and avoiding harm to local communities. Respect requires acceptance that people's preferences, customs, and cultures may be different from one's own. Certain treatments may hold cultural or spiritual significance for entire communities [38, 39, 40]. Healthcare providers should also be cognizant of respect amongst individuals by recognizing and being open to the fact that individuals can 'pick and choose' a variety of treatments for different ailments. Respect also requires openness in discourse in how different treatments are portrayed and represented. Honesty is primarily a matter of frankness and openness. In all cultures and nations, 'do not lie' is a basic prerequisite for ethical human interaction. Herbal practitioners should honestly characterize the form of herbal and wider evidence that is available for their treatments in terms of both efficacy and the potential for adverse effects. Fairness in distribution concerns the availability of treatments. It implies that the same quality of treatment should be available to all, regardless of economic or social status; that, affordably priced treatments that act and are said to do – and are presented as able to do – things in line with currently dominant and beneficial bio-medical frameworks, should not be reserved for the exclusive use of a few. In this arena herb producers are hamstrung. They are not in a position to address the normative, structural, and grand challenges that underpin inequity in availability. However, fairness in the sense outlined by Mill is a simple duty, a basic principle of fairness at the heart of Western moral philosophy [41, 42, 43].

Future Directions in Herbal Medicine Policy

Despite a growing body of supportive research, herbal medicines remain largely outside of health policy, especially public health policy. As the COVID-19 pandemic highlighted, policy and health response are often rapid, reactive, and influenced by nationalist ideologies, leaving no coordinated space for alternative models of disease prevention and management. Yet preventive public health models, including traditional and complementary medicine (TCM), exist and demonstrate success; herbal medicine is integrated into national public health policy in countries such as China. The World Health Organization (WHO) advocates evidence-based and safety-evaluated TCM policy, regulation, training, practice, and research. The emergence of COVID-19 led to coordinated action guiding the provision of TCM, but challenges in dissemination, consistency, acceptance, and integration were noted. Studies highlight the need for future directions in herbal medicine policy, including coordinated international standards, regulation, training, research, and practice. There is also a need for low-cost, low-tech TCM, reflexive and responsive governance principles, recognition of evidence types, and recognition that TCM is not 'one size fits all' and cannot be enacted 'in isolation'. Moving forward, efforts should focus on coordinated government engagement in TCM policy, devising, expanding, and implementing policy that meets national public health goals. Although WHO frameworks exist, flexibility in adaptation is needed for effective integration. In addition, TCM presents national public health opportunities, including basic health promotion, state public health resilience in epidemic response, public health engagement with the natural environment, and long-term engagement in health response. There is a need to formalize health promotion through coordinated regulation and recognition of evidence types, ban specific formulation pathways, and improve identification, labeling, and composition trial quality [21-25].

CONCLUSION

Integrating herbal medicine into public health policy represents both a challenge and an opportunity for global health systems. While concerns about safety, efficacy, and regulatory oversight persist, the

widespread use and cultural significance of herbal remedies make their inclusion in mainstream health systems increasingly necessary. This preliminary exploration outlines a pathway to build effective frameworks through stakeholder engagement, evidence-based practices, and ethical considerations. By studying successful integration models from countries such as China, Malaysia, and the United States, this paper demonstrates that collaboration across sectors—healthcare providers, policymakers, traditional practitioners, and communities—is essential for impactful outcomes. The process demands rigorous research, transparent regulation, and respect for traditional knowledge systems. If implemented thoughtfully, such policies can enhance disease management strategies, expand access to culturally appropriate care, and contribute to the resilience of public health infrastructures in both developed and developing contexts.

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