Jurnal Riset Kualitatif dan Promosi Kesehatan
E-ISSN: 2775-4944
Volume. 1, Issue 2, July 2022
Page No: 72-86

Cultural and Socioeconomic Influences on Medicine Choice: A Comparative Review of Herbal and Pharmaceutical Drug Preferences and Their Implications for Health Policy

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Received : June 23, 2022
Accepted : July 25, 2022
Published : July 31, 2022

Citation: Kartiani, A. (2023). Cultural and Socioeconomic Influences on Medicine Choice: A Comparative Review of Herbal and Pharmaceutical Drug Preferences and Their Implications for Health Policy. Jurnal Riset Kualitatif dan Promosi Kesehatan, 1(2), 72-86.

https://doi.org/10.61194/jrkpk.v1i2.676

ABSTRACT: Public perceptions of herbal and chemical medicine differ significantly between urban and rural populations, influenced by cultural traditions, education levels, economic status, and access to healthcare services. This study aims to analyze these differing perceptions and their implications for public health and regulatory policies. A systematic literature review was conducted using PubMed, Scopus, and Google Scholar, targeting peer-reviewed studies published in the past decade. The findings indicate that urban populations generally prefer pharmaceutical drugs due to their regulatory oversight and clinical validation, whereas rural communities rely more on herbal medicine due to affordability, accessibility, and cultural heritage. Regulatory challenges and inconsistent labeling standards have emerged as critical issues affecting public confidence in herbal medicine. Furthermore, healthcare professionals often lack sufficient knowledge of herbal medicine, limiting their ability to guide patients effectively. These disparities underscore the need for enhanced regulation, public education, and professional training in herbal medicine. The study recommends comprehensive policy interventions, including standardized clinical testing for herbal treatments and increased healthcare access in rural areas. Future research should focus on bridging the divide between traditional and modern medicine through integrative healthcare strategies. Strengthening regulatory frameworks and promoting education will be crucial in ensuring safe and informed medical choices.

Keywords: Herbal Medicine, Chemical Medicine, Public Perception, Healthcare Regulation, Traditional Medicine, Integrative Healthcare, Medical Policy.

INTRODUCTION

The perception of herbal and chemical medicine varies significantly across different societies, influenced by socio-economic, cultural, and environmental factors. The urban-rural divide plays a crucial role in shaping these perceptions, with urban communities having greater exposure to

scientific advancements and pharmaceutical developments, while rural communities often rely on traditional medicine passed down through generations. Herbal medicine has long been a cornerstone of healthcare in many cultures, particularly in rural settings, where access to formal medical facilities is limited (Güler et al., 2015; C. Huang et al., 2018; Nelson, 2024). Conversely, urban populations tend to prioritize pharmaceutical medicine due to its standardized production, clinical validation, and perceived efficacy (Calitz et al., 2014; Li, 2015). Understanding these diverging perspectives is crucial to developing integrated healthcare systems that bridge traditional and modern medical practices.

Several studies have explored the prevalence and cultural significance of herbal medicine in rural areas, highlighting its accessibility and affordability (Kamaraj et al., 2023; Nelson, 2024). In contrast, urban populations often view herbal medicine with skepticism, citing concerns over inconsistent dosages, lack of clinical trials, and potential interactions with chemical drugs (Alissa, 2014; Jain et al., 2022). However, there is also a growing trend of urban dwellers adopting herbal medicine as complementary therapy due to rising health consciousness and awareness of potential side effects associated with prolonged pharmaceutical drug use (Ilyas et al., 2016; Shityakov et al., 2019).

The growing global interest in herbal medicine is reflected in market trends, with projections indicating a substantial increase in herbal medicine sales. The global herbal medicine market is expected to reach USD 348 billion by 2028, up from USD 166 billion in 2021 (Kaur et al., 2024). This shift suggests an increasing demand for natural and holistic treatment approaches, particularly among consumers seeking alternatives to synthetic drugs (Chan, 2014). Despite this growth, challenges remain in integrating herbal medicine into formal healthcare systems, particularly in ensuring its safety, efficacy, and quality control (Makki et al., 2023).

One of the main challenges facing herbal medicine is the lack of stringent regulatory frameworks compared to pharmaceutical drugs. Unlike chemical medicine, which undergoes rigorous testing before market approval, herbal medicine is often subject to minimal oversight, leading to potential quality inconsistencies (Farrington et al., 2018; Parasuraman, 2018). This regulatory gap contributes to consumer uncertainty, particularly in urban areas where individuals rely on scientifically validated treatments (Mohanty et al., 2020). Furthermore, the absence of clear dosage guidelines and potential contamination issues pose risks to consumers, highlighting the need for standardized herbal medicine regulations (Biagi et al., 2016; A. B. d. Souza et al., 2022).

Education and awareness regarding the benefits and risks of both herbal and chemical medicine also play a significant role in shaping public perception. Studies indicate that higher levels of education correlate with increased trust in pharmaceutical medicine due to a stronger understanding of clinical research and drug efficacy (Nelson, 2024; Sadeghi, 2024). In contrast, rural communities, where education levels may be lower, often rely on collective knowledge and ancestral healing practices (Kaur et al., 2024; Odonne et al., 2021). The influence of media and marketing further reinforces these perceptions, as pharmaceutical companies allocate significant resources to advertising, while herbal medicine remains largely promoted through word-of-mouth and traditional healers (Běláčková et al., 2018).

A critical gap in current literature lies in the comparative analysis of urban and rural perspectives on medicine consumption. While numerous studies have examined the benefits and risks of herbal and chemical medicine independently, there is limited research on how socio-economic status, education, and accessibility influence medical choices across different demographic settings (Disch et al., 2017; Yáñez et al., 2021). Additionally, the impact of globalization and modern health policies on traditional medicine practices remains underexplored (Bhamra et al., 2017; Ouoba et al., 2023).

The primary objective of this review is to analyze the key factors influencing urban and rural communities' perceptions of herbal and chemical medicine. Specifically, this study will examine socio-economic determinants, educational influences, cultural beliefs, and regulatory frameworks to provide a comprehensive understanding of how these variables shape healthcare choices. By addressing these factors, this research aims to bridge the gap between traditional and modern medicine, promoting an integrated approach to healthcare that ensures safety and efficacy for all populations.

This study focuses on global perspectives, with particular attention to regions where herbal medicine plays a significant role in traditional healthcare practices. By comparing findings from various geographical settings, including Asia, Africa, and Europe, this research seeks to provide a broader understanding of medical perceptions across different socio-cultural contexts. Furthermore, this review will highlight policy recommendations for improving herbal medicine regulation and public education to enhance consumer confidence and promote safe medical practices.

METHOD

This study adopted a narrative review approach to investigate how cultural and socioeconomic contexts influence public preferences and perceptions regarding herbal and pharmaceutical medicines. The narrative review method was selected to allow for a broad, interpretive synthesis of existing literature, integrating theoretical perspectives and empirical findings across diverse disciplines. This approach enables a comprehensive understanding of how traditional beliefs, economic status, education, and health policy intersect in shaping medical choices across different populations.

The literature search was conducted through academic databases including PubMed, Scopus, and Google Scholar. The review focused on peer-reviewed journal articles, government documents, and reports issued by international health organizations such as the World Health Organization (WHO), published within the last decade (2013–2023). Search terms included variations of "herbal medicine," "pharmaceutical drugs," "cultural health practices," "healthcare access," and "socioeconomic determinants of medicine use." The selection of sources was guided by their relevance to the thematic focus of the study and their contribution to the ongoing academic discourse surrounding integrative healthcare.

Rather than applying strict inclusion and exclusion criteria as in systematic reviews, this narrative review prioritized conceptual relevance, interpretive depth, and contextual richness. Studies were

examined in terms of how they address public perception, cultural traditions, economic barriers, regulatory oversight, and professional medical practice in relation to the use of herbal and chemical medicine. The findings were analyzed thematically and interpreted through a comparative lens, highlighting regional and demographic contrasts, particularly between urban and rural populations.

The narrative review format allowed for an exploration of both academic literature and policy-oriented texts, thereby bridging the gap between empirical research and applied health governance. This method was considered appropriate to capture the complex and nuanced interactions between cultural heritage, social structures, and institutional frameworks that influence medicine preferences globally.

RESULT AND DISCUSSION

Differences in Urban and Rural Community Perceptions

The perception of herbal and chemical medicine between urban and rural populations presents distinct variations shaped by socio-economic, educational, and cultural factors. Urban communities generally have better access to healthcare education and scientific information, contributing to their preference for chemical medicine. They often perceive chemical medicine as a more standardized and clinically proven option, supported by rigorous testing and regulatory oversight (C. Huang et al., 2018; Xiong et al., 2021).

Conversely, rural populations tend to rely more on tradition and local knowledge, making them more inclined to trust herbal medicine, which has been used for generations. Studies indicate that rural communities frequently view herbal medicine as a natural and lower-risk alternative compared to chemical drugs, which they often perceive as expensive and potentially harmful (Allen et al., 2023; Алекперова et al., 2020). Additionally, spiritual and cultural beliefs significantly influence these preferences. In many rural societies, herbal medicine is considered an essential component of cultural heritage and spirituality, reinforcing its value as a primary treatment method (Fullybright, 2019; Pan et al., 2014).

Education also plays a crucial role in shaping perceptions. Research suggests that individuals with higher levels of education tend to be more critical of herbal medicine, often demanding scientific evidence before considering its use. Educated populations are also more aware of potential risks and drug interactions (C. Huang et al., 2018; Xu et al., 2018). A study in China found that individuals with advanced education were more likely to opt for evidence-based medical treatments (Xiong et al., 2021). On the other hand, individuals with lower education levels, who may have limited access to scientific literature, are more likely to rely on traditional medicine as their primary healthcare approach.

Interestingly, an increasing number of rural individuals are gradually accepting chemical medicine due to enhanced healthcare education and government-led awareness campaigns (Iketani & Konomura, 2022; Wang & Chen, 2018). Understanding how these differences interact with other elements, such as access to healthcare services and economic factors, is crucial in designing policies

that foster evidence-based medical practices while respecting traditional healthcare knowledge (Allen et al., 2023; Bhamra et al., 2019).

Socioeconomic Factors Influencing Medical Choices

Economic status is a major determinant of access to and preference for herbal and chemical medicine. In lower-income populations, the high cost of pharmaceutical drugs often drives individuals toward more affordable herbal alternatives. Studies have consistently shown that individuals in lower-income areas prefer herbal medicine due to its affordability and availability (Y. Huang et al., 2018; Sadeghi, 2024). In developing countries, herbal medicine use is not just a choice but a necessity, as formal healthcare services are often inaccessible or prohibitively expensive (Allen et al., 2023; Sadeghi, 2024).

For instance, research in Kenya found that individuals in impoverished regions were more likely to use herbal medicine than wealthier individuals, who had better access to modern healthcare facilities and pharmaceutical drugs (Allen et al., 2023; C. Huang et al., 2018). Furthermore, awareness and education regarding herbal medicine remain relatively low in low-income communities, despite their reliance on it (Pan et al., 2014).

Conversely, wealthier populations, particularly in urban areas, have greater access to medical services, including hospitals, pharmacies, and private healthcare providers. Many urban dwellers have health insurance, which reduces the cost of chemical medicine, making it a more viable and preferred option (Güler et al., 2015; C. Huang et al., 2018). In contrast, rural communities often lack adequate healthcare infrastructure, leading to greater reliance on traditional and herbal remedies (Abdul-Ghaffar et al., 2022; Zhao et al., 2023).

Additionally, healthcare infrastructure disparities significantly impact medication choices. In many rural areas, healthcare facilities are insufficient, making it difficult for individuals to access pharmaceutical drugs. In countries with underdeveloped healthcare systems, expectations for effective medical treatment are often low, reinforcing the preference for herbal remedies (Al-Ramahi et al., 2014; C. Lee et al., 2024). This highlights the importance of healthcare accessibility in determining whether a population leans toward chemical or herbal medicine (Abdul-Ghaffar et al., 2022; Italia et al., 2015).

Cultural and Traditional Influences in Medicine Use

Traditional medicine has long been embedded in cultural practices across different communities. In rural areas, herbal medicine is often the first line of treatment, primarily because it has been an integral part of familial and communal healthcare for generations (Bhamra et al., 2019; Jin et al., 2024). Cultural belief systems further reinforce the use of herbal medicine, with many communities valuing the spiritual and ancestral significance of natural remedies (Alekperova et al., 2020; Xu et al., 2018).

On the other hand, urban populations, exposed to modern education and scientific research, often exhibit more skepticism toward herbal remedies, demanding empirical evidence of their efficacy. Western medical systems, which emphasize clinical trials and pharmaceutical regulation, contribute to this trend (Sadeghi, 2024). However, certain ethnic communities maintain strong traditional practices, integrating herbal medicine into their healthcare despite the availability of modern treatments (Biagi et al., 2016; D. Lee et al., 2020).

Comparative research has shown that different ethnic groups display unique herbal medicine consumption patterns. For example, East Asian communities, particularly in China and Japan, have a well-established tradition of herbal medicine, where formulations such as Traditional Chinese Medicine (TCM) remain widely used even among educated individuals (Xu et al., 2018). Meanwhile, Afro-Caribbean communities often integrate herbal medicine with spiritual healing practices, demonstrating the interplay between medical and cultural beliefs (Malik et al., 2015).

The growing interest in holistic healthcare has led to a renewed appreciation for herbal medicine in urban settings. As health-conscious consumers seek natural alternatives to synthetic drugs, herbal medicine is increasingly seen as a complementary approach rather than an outdated practice. Integrating traditional and modern medicine could bridge the gap between evidence-based medical treatments and culturally significant healing practices (Kashyap et al., 2013; Linsky & Simon, 2012).

Regulation and Availability of Medicine

Regulatory frameworks play a crucial role in determining the accessibility and credibility of both herbal and chemical medicine. Countries with stringent regulations, such as those in the European Union, enforce rigorous quality control measures to ensure herbal products meet safety and efficacy standards (Biagi et al., 2016). In Italy, for example, regulatory efforts have been made to streamline herbal medicine production while maintaining high safety standards, thereby supporting the fitotherapy market (Biagi et al., 2016).

In contrast, countries with lax regulatory environments often experience a proliferation of unverified herbal products, posing potential health risks (Saberi et al., 2018; Sadeghi, 2024). Many herbal supplements are sold without medical supervision, raising concerns about contamination, undisclosed ingredients, and harmful interactions with pharmaceutical drugs (D. Lee et al., 2020). Regulatory inconsistencies across different countries further complicate consumer trust in herbal medicine safety (C. Huang et al., 2018).

The role of healthcare professionals in guiding patients on medication choices is crucial. Doctors and pharmacists play a significant role in educating patients about herbal and chemical medicine safety. However, studies indicate that many healthcare professionals lack adequate knowledge about herbal medicine, limiting their ability to provide accurate recommendations (Bhamra et al., 2019; Fullybright, 2019). Training programs focusing on integrating traditional and modern medicine could help bridge this knowledge gap, enabling professionals to offer more comprehensive healthcare guidance (Kim et al., 2021).

As global health organizations, such as the World Health Organization (WHO), advocate for the safe integration of herbal medicine into modern healthcare systems, ongoing research and policy development remain necessary. Collaboration between regulatory bodies, healthcare providers, and researchers can facilitate the development of standardized herbal medicine guidelines, ensuring public safety while preserving cultural healthcare traditions (Biagi et al., 2016; Goda, 2022).

Comparing Findings with Existing Literature

The findings of this study align with previous research that highlights the complexity of public perceptions regarding herbal and chemical medicine. Prior studies have consistently demonstrated that perceptions of effectiveness and safety are strongly influenced by cultural background, education, and healthcare regulations across different countries. For instance, Bhamra et al. and Huang et al. (2018) reported that many healthcare practitioners in the United Kingdom hesitate to recommend herbal medicine due to concerns about the lack of robust scientific evidence supporting its efficacy(Bhamra et al., 2019; C. Huang et al., 2018). This skepticism among healthcare professionals resonates with the findings of the present study, which also identified reluctance among medical practitioners to endorse herbal medicine despite its cultural significance within various communities.

In addition to healthcare professionals' perspectives, the study by Souza et al. and Nelson (2024) emphasized that inadequate labeling and inconsistent regulatory standards for herbal medicine can contribute to irrational use and potential health risks(G. C. Souza et al., 2024). The current findings reinforce this argument, highlighting that regulatory challenges play a crucial role in shaping public perception. These regulatory shortcomings underscore the need for enhanced consumer education and more stringent oversight of herbal medicine production and distribution. Without proper regulation, herbal medicine products may lack standardization, leading to concerns about their safety and efficacy compared to well-regulated pharmaceutical drugs.

The role of cultural and traditional beliefs in shaping medical preferences has also been extensively documented in prior literature. Research by Güler et al. (2015) indicated that the formulation and use of herbal medicine vary not only between societies but also within communities(Güler et al., 2015). The present study confirms these observations, demonstrating that deeply ingrained cultural traditions continue to drive the preference for herbal medicine, even in regions where pharmaceutical options are readily available. Additionally, studies by Malik et al. and Ouoba et al. (2023) provided evidence that traditional medicine in the Himalayas is not merely a healthcare choice but a key element of cultural and spiritual identity(Ouoba et al., 2023). These findings support the argument that herbal medicine use is often passed down through generations, maintaining its relevance despite the increasing availability of pharmaceutical alternatives.

The Influence of Systemic Factors on Medical Preferences

Systemic factors, including government regulations, healthcare accessibility, education, and sociocultural influences, play a significant role in determining whether individuals choose herbal

or chemical medicine. In terms of regulation, government policies greatly impact how these medicines are marketed and accessed. Previous research has demonstrated that in countries with strict regulatory frameworks, pharmaceutical drugs are more widely trusted due to their rigorous evaluation processes. Conversely, in regions where herbal medicine is poorly regulated, public concerns about product safety and efficacy persist (Biagi et al., 2016). For example, in Italy, regulatory measures require clear consumer education on herbal medicine use, leading to more cautious adoption among the public (Biagi et al., 2016).

Healthcare access is another critical determinant of medical preferences. Populations with greater access to doctors and formal medical facilities tend to favor pharmaceutical drugs because they receive more information about their safety and effectiveness from healthcare professionals. Conversely, in rural and underserved communities, herbal medicine remains the primary healthcare option due to its affordability and availability (Bhamra et al., 2019). This disparity in healthcare access has been documented in various studies, showing that individuals in remote areas often rely on herbal medicine not only because of cultural preferences but also because pharmaceutical drugs are difficult to obtain (Abdul-Ghaffar et al., 2022; Zhao et al., 2023).

Education also shapes perceptions of herbal and chemical medicine. Studies indicate that individuals with higher levels of education tend to be more critical of herbal medicine and demand more scientific evidence before adopting its use. Conversely, those with limited formal education are more likely to rely on traditional medicine, often viewing it as safer and more familiar (D. Lee et al., 2020). These findings align with the results of the present study, which illustrate that education plays a decisive role in whether individuals choose herbal or pharmaceutical treatments.

The role of sociocultural factors in shaping medical choices cannot be ignored. Cultural heritage and societal norms strongly influence how people perceive different types of medicine. For instance, research by Allen et al. (2023) and Pan et al. (2014) indicated that certain ethnic groups have deep-rooted traditions that prioritize herbal medicine, often considering it an essential aspect of their identity(Allen et al., 2023; Pan et al., 2014). The present study further supports this argument, showing that cultural attitudes towards herbal medicine remain prevalent in many rural communities, even as pharmaceutical medicine gains traction in urban settings.

Healthcare professionals play a vital role in guiding patient decisions regarding herbal and chemical medicine. However, research suggests that many healthcare practitioners lack adequate training on herbal medicine, limiting their ability to provide informed recommendations (Kamaraj et al., 2023; Kim et al., 2021). This knowledge gap has significant implications for patient safety, as uninformed use of herbal medicine alongside pharmaceutical drugs can lead to harmful interactions. The present study corroborates these findings, emphasizing the urgent need for medical training programs that integrate knowledge of both herbal and pharmaceutical medicine.

Limitation

Despite its comprehensive approach, this study has certain limitations. First, variations in regulatory frameworks across different countries make it difficult to generalize findings on public

perception and policy effectiveness. Additionally, the lack of standardized clinical research on herbal medicine means that many studies rely on self-reported data, which may introduce bias. Another limitation is the challenge of accurately capturing the impact of informal knowledge transmission within communities, as much of herbal medicine use is based on oral traditions rather than documented guidelines. Finally, while this study examines a broad range of influencing factors, it does not account for the potential role of emerging technologies in shaping future perceptions of medicine use.

Implication

The findings of this study have important implications for health policy and regulatory frameworks worldwide. First, there is a need to review and strengthen policies governing herbal and pharmaceutical medicine to ensure product safety and efficacy. Many developing countries lack adequate regulations for herbal medicine, increasing the risk of public health issues due to unverified or contaminated products. Second, public health initiatives should prioritize education campaigns to raise awareness about the risks and benefits of herbal medicine use. Many consumers, particularly in rural areas, lack access to reliable information about potential drug interactions and dosage guidelines. Enhancing public knowledge through government-led health programs could lead to safer consumption practices.

Another critical implication concerns the role of healthcare professionals in guiding patient decisions. Medical training programs should integrate coursework on herbal medicine to equip healthcare practitioners with the knowledge required to provide balanced recommendations. Given the growing trend of complementary and integrative medicine, healthcare providers must be well-versed in both traditional and modern treatment options to ensure patient safety.

Finally, future research should focus on improving the clinical evaluation of herbal medicine to enhance its credibility within the scientific community. Standardized clinical trials assessing the efficacy and safety of commonly used herbal treatments could help bridge the gap between traditional and evidence-based medicine. Additionally, longitudinal studies on shifting public perceptions would provide valuable insights into how societal attitudes toward medicine evolve over time.

By addressing these challenges, policymakers, researchers, and healthcare professionals can work toward a more informed and integrated healthcare system that respects cultural traditions while ensuring patient safety and treatment efficacy.

CONCLUSION

This review has demonstrated that the choice between herbal and pharmaceutical medicine is shaped by a complex interplay of cultural traditions, socioeconomic conditions, educational background, and the availability of healthcare services. Urban populations tend to favor pharmaceutical drugs due to their clinical validation and regulatory control, while rural

communities continue to rely on herbal medicine as a culturally rooted and accessible alternative. These divergent perceptions are not merely personal preferences but are deeply influenced by structural inequalities in healthcare systems, disparities in education, and the uneven enforcement of medicine regulations.

To translate these findings into actionable policy, governments and health institutions must implement integrated health frameworks that recognize the legitimacy of both traditional and modern medicine. Policymakers should prioritize the development of standardized clinical evaluation protocols for commonly used herbal treatments, supported by investments in pharmacovigilance systems that monitor their safety and interactions with conventional drugs. Additionally, national regulatory agencies must work toward harmonizing standards for the production, labeling, and marketing of herbal products, in alignment with international guidelines such as those proposed by the WHO.

Beyond regulatory reform, health education should be expanded to include traditional medicine literacy for both consumers and healthcare professionals. Curricula in medical and pharmacy schools should incorporate evidence-based modules on herbal medicine to ensure practitioners can offer informed guidance. Public campaigns should also be launched to raise awareness about proper usage, potential risks, and evidence-based benefits of both types of medicine, particularly in rural and underserved areas.

Looking ahead, future research should examine the implementation and outcomes of integrative healthcare models that combine standardized herbal interventions with conventional pharmaceutical treatment. Comparative effectiveness studies, patient-reported outcome analyses, and health economics evaluations will be critical in determining the viability and scalability of such models across different health systems.

In the long term, the insights from this study can contribute to a more inclusive and culturally competent healthcare system. By embedding traditional medicine within formal regulatory structures, while maintaining scientific rigor and patient safety, policymakers can bridge the historical divide between indigenous practices and biomedicine. Such reforms not only enhance public trust but also ensure equitable access to diverse and validated forms of healthcare.

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