

Barriers to Global Recognition of Traditional African Medicines: A Systematic Review of Cultural, Scientific, Regulatory, and Economic Factors

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How to cite this paper: Lamwaka, A.V., Obwona, M.H., Onen, D. and Aber, G.V. (2024) Barriers to Global Recognition of Traditional African Medicines: A Systematic Review of Cultural, Scientific, Regulatory, and Economic Factors. *American Journal of Plant Sciences*, 15, 1031-1048.
<https://doi.org/10.4236/ajps.2024.1511066>

Received: July 23, 2024

Accepted: November 15, 2024

Published: November 18, 2024

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Abstract

Despite the profound cultural and medicinal heritage of traditional African medicines (TAM), their global recognition remains notably limited. This study investigates the factors behind this issue, focusing on cultural perceptions, scientific validation, regulatory frameworks, and pharmaceutical industry influence. Utilizing a systematic literature review (SLR) to provide a thorough and structured overview, the research addresses these factors with transparency and reproducibility. Key findings reveal that negative cultural perceptions, the dominance of Western medicine, and skepticism towards traditional healers, especially in urban and educated populations, marginalize TAM. Additionally, religious beliefs and historical influences, such as colonialism, further devalue indigenous knowledge systems. The study also highlights a significant lack of scientific research and clinical trials, which challenges the conventional validation of TAM's efficacy. Moreover, inconsistent international and national regulatory frameworks and the pharmaceutical industry's dominance impede TAM's integration into global healthcare systems. To enhance TAM's credibility and global acceptance, the study advocates for standardized regulatory policies, increased scientific research, and a reevaluation of intellectual property laws. This shift towards a more inclusive and integrative approach in global health systems could bridge the gap between traditional and modern medical practices, promoting a more holistic understanding of health and wellness.

Keywords

Traditional African Medicines (TAM), Cultural Perceptions, Scientific

1. Introduction

Traditional African Medicine (TAM) is a significant repository of cultural wisdom and medicinal knowledge that has sustained communities across the African continent for centuries [1]. Despite its deep historical roots and enduring cultural relevance, TAM's recognition within global health systems remains disappointingly limited. This disparity between TAM's rich heritage and its low visibility in global health discourse is a multifaceted issue, involving cultural perceptions, scientific validation, and regulatory challenges [2]. Such a lack of acknowledgment of diverse medicinal systems limits global healthcare options and undermines the contribution TAM could make to improving health outcomes worldwide.

The under-recognition of TAM is not just a theoretical issue; it has tangible effects on healthcare accessibility and treatment diversity. TAM encompasses a wide array of medicinal practices and knowledge that could substantially enhance global health systems if integrated effectively (Dawson, 2020). However, the lack of rigorous scientific research and clinical trials on TAM creates barriers to its acceptance within mainstream medical practices [3]. These obstacles call for a thorough examination of how TAM can gain more recognition and utilization within global health frameworks, particularly in the context of promoting healthcare equity.

Previous research on TAM's global recognition has made important strides but has often lacked a comprehensive and systematic approach. International studies, such as those by Heinrich *et al.* in 2018 and [4], have explored cultural perceptions and regulatory challenges but have not always synthesized these factors holistically. Meanwhile, local studies in Uganda, including those by Amone and colleagues [5] [6] have focused on TAM's integration within national health systems but often lacked a rigorous analysis of the complex barriers to its global recognition. These fragmented research efforts have left gaps in understanding how various factors collectively influence TAM's standing on the global stage.

To address these gaps, this study employed a systematic literature review (SLR) to provide a structured and comprehensive analysis of the factors affecting TAM's global recognition. The SLR approach ensured a transparent and reproducible examination of critical issues, including negative cultural perceptions, the dominance of Western medicine, and the inconsistencies in regulatory frameworks and pharmaceutical industry practices [7]. By integrating insights from both global and local perspectives, this research advocates for a more inclusive approach to traditional medicine, highlighting the importance of TAM within the African context and promoting its rightful place in global health systems. The study's findings are expected to contribute to advancing TAM's credibility and acceptance, fostering a more holistic understanding of health that bridges the gap between traditional and modern medical practices.

Research Questions

This study sought to answer the following research questions:

- 1) What are the key cultural perceptions influencing the global recognition of traditional African medicines (TAM)?
- 2) How does the lack of scientific validation and clinical research impact the acceptance and integration of TAM into mainstream healthcare systems?
- 3) What are the major regulatory challenges affecting the global recognition and integration of TAM?
- 4) How does the influence of the pharmaceutical industry contribute to the marginalization of TAM in global health discourse?

Literature Review

Over the years, scholars have extensively examined the factors contributing to the low global recognition of Traditional African Medicine (TAM). One dominant theme in these studies is the influence of cultural perceptions, which often marginalize indigenous healing practices in favor of Western medicine. TAM, deeply rooted in cultural and spiritual beliefs, has been practiced across Africa for centuries [1]. However, colonialism and the subsequent spread of Western influence have led to the perception of these practices as inferior and unscientific [8]. Particularly among urbanized and educated populations, there is growing skepticism toward traditional healers and their methods [9]. This skepticism is more pronounced in African cities, where TAM is frequently viewed as outdated or even dangerous, while Western medicine is seen as modern and reliable [3]. Colonial policies that denigrated indigenous knowledge systems have further fueled these perceptions, contributing to the marginalization of TAM in contemporary healthcare discourse [5]. The integration of TAM into mainstream healthcare systems is also hindered by the lack of scientific validation and clinical research. Issues related to standardization, dosage precision, and clinical evidence create significant barriers to TAM's acceptance within the global medical community [10]. Scholars argue that the absence of rigorous scientific studies and clinical trials on TAM diminishes its credibility among health professionals and patients alike [2]. This challenge is compounded by the difficulty in aligning traditional practices with the standardized procedures demanded by Western scientific research [4]. Moreover, limited funding and resources for research on TAM further restrict efforts to validate its efficacy systematically [11]. Bridging this gap requires greater investment in research to facilitate the integration of traditional and modern medical practices.

Regulatory frameworks are another critical factor influencing TAM's global recognition and integration. Inconsistent national and international policies have created significant obstacles to the commercialization and distribution of traditional medicines [12]. In many African countries, including Uganda, TAM operates in a legal gray area without the formal recognition or regulation necessary to protect both practitioners and patients [8]. This lack of regulation results in a shortage of standardization and safety oversight, leaving traditional medicine vulnerable to exploitation [5]. On the global stage, while the World Health Organization

(WHO) has made efforts to promote the integration of traditional medicine into national health systems, these initiatives have seen limited success due to varied regulatory environments and the absence of a cohesive international framework [13]. The lack of standardized regulatory policies creates an uneven playing field, limiting TAM's potential contribution to global healthcare systems.

The pharmaceutical industry also plays a significant role in the marginalization of TAM. The global pharmaceutical industry, driven largely by profit motives, often prioritizes the development and promotion of synthetic drugs over traditional remedies [4]. This bias is reinforced by intellectual property regimes that favor patented drugs and fail to adequately recognize or protect traditional knowledge [12]. Consequently, pharmaceutical companies have little incentive to invest in research and development for traditional medicines, despite their potential therapeutic benefits [2]. The pharmaceutical industry's dominance in shaping healthcare policies and research agendas further sidelines traditional medicines, reinforcing a cycle in which TAM remains undervalued and under-researched [3]. This situation underscores the need for a more equitable approach to healthcare that acknowledges the contributions of traditional medicinal systems.

Addressing the challenges facing TAM requires a holistic and inclusive approach. Scholars like Amone *et al.* advocate for shifting cultural perceptions through education and awareness campaigns that emphasize the value of indigenous knowledge systems [6]. Additionally, Nyakaana in (2020) recommend that African governments implement more robust regulatory frameworks to recognize and support traditional medicine [6]. These frameworks should align with international standards to ensure the safe and effective integration of TAM into global healthcare systems. Collaboration between traditional healers and scientific researchers is also essential for validating TAM practices and promoting their acceptance in mainstream medicine [2]. Such efforts can help bridge the divide between traditional and modern medical practices, ensuring that TAM contributes more fully to global health.

Despite these recommendations, there remain significant gaps in the literature on systematically addressing the regulatory, scientific, and cultural challenges facing TAM. Most studies have focused on isolated aspects of the issue, such as cultural perceptions or regulatory hurdles, without providing a comprehensive analysis of how these factors interact to marginalize TAM [3]. Moreover, existing research often overlooks the economic and political dimensions, particularly the role of the pharmaceutical industry in shaping healthcare priorities [10]. This study aims to fill these gaps by conducting a systematic literature review (SLR) to synthesize findings across relevant fields. Through this integrated approach, it seeks to provide a clearer understanding of the complex factors influencing TAM's global recognition and to offer recommendations for addressing these challenges more effectively.

2. Aim of the Study

This study aims to fill these gaps by conducting a systematic literature review

(SLR) to synthesize findings across relevant fields. Through this integrated approach, it seeks to provide a clearer understanding of the complex factors influencing TAM's global recognition and to offer recommendations for addressing these challenges more effectively.

3. Methodology

This research used both quantitative and qualitative method. In this paper the authors employed a systematic literature review (SLR) to provide analysis of the factors affecting TAMS global recognition.

3.1. Research Design

This study utilized the Systematic Literature Review (SLR) research design, a rigorous and structured method aimed at synthesizing existing literature on a specific topic. Originating in evidence-based medicine, pioneered by Cochrane in the 1970s, SLRs have since been adopted across various disciplines, including social sciences and education [14]. The SLR approach is characterized by systematically searching, selecting, and analyzing studies to produce a reliable synthesis of evidence, providing clearer answers to research questions [15]. This design was chosen for its capacity to comprehensively address the complex issues surrounding Traditional African Medicines (TAM) and their limited global recognition by synthesizing insights from diverse fields such as cultural studies, medical research, and regulatory frameworks.

3.2. Data Collection

The data collection process began with the identification of relevant literature from multiple academic databases, including Google Scholar, PubMed, and ScienceDirect, using keywords like "Traditional African Medicine," "global recognition," "scientific validation," and "pharmaceutical industry influence." An initial pool of 98 articles was gathered, encompassing both international and local perspectives on TAM. The selection process involved applying inclusion criteria that prioritized peer-reviewed articles published in English between 2010 and 2024, directly addressing the research questions. Exclusion criteria eliminated non-peer-reviewed articles, studies focused on non-African traditional medicine systems, and those with limited methodological rigor. After this filtering process, 26 articles were excluded, leaving a final sample of 72 articles. This sample size was adequate given the study's complexity, ensuring a comprehensive analysis of TAM across various dimensions, including cultural perceptions, scientific validation, regulatory challenges, and pharmaceutical industry influence. The thoroughness of this approach aligns with the recommendations of systematic review methodology experts, who emphasize the importance of capturing a full range of perspectives [16].

3.3. Data Analysis Method

Thematic analysis was used to synthesize the findings from the selected studies.

This qualitative technique identifies and categorizes key themes emerging from the literature [17]. In this study, themes such as negative cultural perceptions, lack of scientific validation, regulatory inconsistencies, and the dominance of the pharmaceutical industry were identified. These themes were analyzed in relation to the research questions, and the findings were interpreted to highlight the interconnections between cultural, scientific, and regulatory factors that influence TAM's global recognition. By integrating insights from multiple studies, the SLR method provided a nuanced understanding of the barriers and opportunities for TAM's integration into global healthcare systems.

4. Results

Research Question 1

The first research question that this study sought to answer was “*What are the key cultural perceptions influencing the global recognition of traditional African medicines (TAM)*”? To answer this question, a comprehensive review was conducted and the findings showed that several cultural perceptions have significantly shaped the global recognition of Traditional African Medicines (TAM), often obstructing their integration into mainstream healthcare systems. Some of these basic cultural factors are synthesized and presented in **Table 1**.

Table 1. Key cultural factors that hinder the global recognition of traditional African medicines.

Theme	Specific Factors	Citations
Colonial Legacy	Perception of TAM as “primitive” and “unscientific” rooted in colonial history.	Mander <i>et al.</i> (2019); Gqaleni <i>et al.</i> (2007)
Religious Influence	Stigmatization of TAM as “pagan” and “superstitious” by Christianity and Islam, leading to diminished status.	Nyika (2007); Abdullahi (2011)
Preference for Western Medicine	Western pharmaceuticals are preferred in urban areas, seen as more modern and scientifically validated.	Amone <i>et al.</i> (2023); Busia (2005)
Media Portrayal	Media portrays Western medicine as the only legitimate form of healthcare, marginalizing TAM.	Amone <i>et al.</i> (2023)
Modernization and Urbanization	Younger generations in urbanized African societies increasingly view TAM as regressive and irrelevant.	Heinrich <i>et al.</i> (2018); Wambebe (2018)
Cultural Shifts	Changing cultural identity and preference for modern practices contribute to TAM's marginalization.	Heinrich <i>et al.</i> (2018); Wambebe (2018)
Educational System Bias	Lack of integration of TAM into formal education systems reinforces its perceived inferiority.	Busia (2005)
Generational Attitudes	Older generation's traditional practices are increasingly dismissed by younger generations.	Heinrich <i>et al.</i> (2018)
Lack of Research and Validation	Limited scientific research and validation of TAM reduce its credibility in the global health community.	Mander <i>et al.</i> (2019); Amone <i>et al.</i> (2023)
Economic Factors	Limited funding and support for TAM research compared to Western medicine contribute to its lower visibility.	Gqaleni <i>et al.</i> (2007)

The findings in **Table 1** and other sources reveal that global recognition of Traditional African Medicines (TAM) is significantly hindered by a complex array of cultural factors that are deeply intertwined with historical and contemporary biases. One of the primary issues is the colonial legacy that has labeled TAM as

“primitive” and “unscientific,” as noted by Mander [1], who argue that “*Traditional African Medicines are often perceived as ‘primitive’ and ‘unscientific’ due to their association with indigenous healers and spiritual practices.*” This perception reflects the colonial-era devaluation of indigenous knowledge systems, which were systematically undermined in favor of Western medical practices. Such historical prejudices continue to impact contemporary views, perpetuating the marginalization of TAM and reinforcing the preference for Western medicine.

TAMS acceptance can be improved by considering the perceived usefulness such as relevance to users’ tasks and goals, effectiveness in improving performance, time saving capabilities and enhanced productivity. Perceived usefulness of relevance to users’ tasks and goals, effectiveness in improving performances, time saving capacities and enhanced productivity. Considering perceived ease of use includes intuitive interface, simple navigation, clear instructions and minimal learning curve. Other factors to be considered includes behavioral intentions, external factors like training support, technical infrastructure, security reliability, cost benefit analysis, personal characteristics, organization culture, leadership support, support allocation, design and development factors like user centred design, usability testing, feedback mechanisms and continuous improvement.

Religious influences have also played a crucial role in shaping negative perceptions of TAM. Christianity and Islam, as Nyika [8] highlights, contributed to the stigmatization of TAM by labeling it as “*pagan*” and “*superstitious*,” which diminished its status within many African societies. Abdullahi [18] further notes that “*TAM continues to be viewed with suspicion by many due to its association with witchcraft and ancestral rituals*,” which are seen as incompatible with modern religious beliefs. These religious biases have entrenched skepticism towards TAM, hindering its acceptance and integration into broader healthcare systems.

Furthermore, the preference for Western medicine over TAM is reinforced by media portrayals and educational biases. Amone [6] points out that “*In urbanized areas, Western pharmaceuticals are often favored over traditional medicines, which are seen as outdated and less effective*,” while Busia [19] observes that “The promotion of Western medicine as the ‘gold standard’ in educational systems has further entrenched the belief that TAM lacks scientific credibility.” This media and educational bias not only elevates Western medicine but also marginalizes TAM, limiting its visibility and recognition. Additionally, Heinrich *et al.* [3] note that as “*African societies modernize, younger generations are increasingly distancing themselves from traditional medicines*,” reflecting a generational shift towards viewing TAM as regressive. These factors collectively illustrate how historical, religious, media, and educational biases perpetuate the marginalization of TAM and impede its global acceptance.

Research Question 2

The second research question in this study is: “How does the lack of scientific validation and clinical research impact the acceptance and integration of Traditional African Medicines (TAM) into mainstream healthcare systems?” To address this question, a detailed literature review was conducted, which uncovered

several key cases demonstrating how insufficient scientific validation impedes the acceptance and integration of TAM into established healthcare systems. Ten of these cases are synthesized and summarized in **Table 2**, offering a thorough overview of the consequences of inadequate validation on TAM's integration into mainstream healthcare frameworks.

Table 2. Impact of lack of scientific validation and clinical research on the integration of Traditional African Medicines (TAM) into mainstream healthcare.

Theme	Specific Cases	Citations
Limited Evidence Base	Many TAM practices lack rigorous scientific studies, making it difficult to demonstrate their efficacy.	WHO (2013); Mander <i>et al.</i> (2019)
Regulatory Challenges	Absence of standardization and quality control in TAM research hampers regulatory approval and integration.	Gqaleni <i>et al.</i> (2007); Busia (2005)
Integration Barriers	Lack of clinical evidence prevents TAM from being incorporated into mainstream healthcare guidelines.	Amone <i>et al.</i> (2023); Heinrich <i>et al.</i> (2018)
Public Perception	Without scientific validation, TAM is often dismissed as unproven and unreliable by the public and healthcare providers.	Abdullahi (2011); Mander <i>et al.</i> (2019)
Funding Limitations	Insufficient funding for TAM research leads to a lack of comprehensive clinical trials and evidence.	WHO (2013); Gqaleni <i>et al.</i> (2007)
Educational Gaps	Healthcare professionals receive limited training on TAM due to the lack of validated research and evidence.	Busia (2005); Wambebe (2018)
Cultural Bias	Scientific validation is often disregarded in favor of Western medicine, which affects TAM's integration.	Nyika (2007); Heinrich <i>et al.</i> (2018)
Clinical Trial Limitations	Limited clinical trials on TAM result in inadequate data to support its efficacy and safety.	Mander <i>et al.</i> (2019); Amone <i>et al.</i> (2023)
Healthcare Policy Impact	Lack of evidence-based research influences policy decisions, leading to exclusion of TAM from healthcare policies.	Gqaleni <i>et al.</i> (2007); Busia (2005)
International Recognition	Without robust scientific evidence, TAM struggles to gain acceptance and recognition in international health forums.	WHO (2013); Amone <i>et al.</i> (2023)

The findings in **Table 2** and other sources reveal that the absence of scientific validation and clinical research critically hampers the acceptance and integration of Traditional African Medicines (TAM) into mainstream healthcare systems. A fundamental challenge is the limited evidence base for many TAM practices, which undermines efforts to demonstrate their efficacy and reliability. As noted by WHO (2013), “*Many traditional remedies lack rigorous scientific studies to support their efficacy, leaving them marginalized in mainstream healthcare*” (p. 102). This issue is further exacerbated by regulatory challenges, where the lack of standardization and quality control in TAM research obstructs regulatory approval and integration into health systems [20]. As Busia (2005) highlights, “*The absence of standardized clinical research hinders regulatory approval and integration of TAM into health systems*” (p. 31). Without a robust clinical evidence base, TAM struggles to be incorporated into official healthcare guidelines, reinforcing its marginalization [6].

Public perception of TAM is significantly impacted by the absence of scientific validation, which leads to its dismissal as unproven and unreliable. Abdullahi (2011) asserts, “*Traditional medicines are often viewed as unreliable and unproven*

due to the lack of scientific validation” (p. 158). This skepticism is compounded by insufficient funding for research, which limits the scope of clinical trials and available evidence, further entrenching TAM’s marginalization [13]. Educational gaps also contribute to the problem, as healthcare professionals receive minimal training on TAM, perpetuating ignorance and undervaluation [17]. Heinrich *et al.* (2018) observe that the “*dominance of Western medicine and its evidence-based approach often disregards the potential of TAM*” (p. 203), illustrating how cultural biases affect the integration of TAM into healthcare systems.

The scarcity of clinical trials results in inadequate data to support TAM’s efficacy and safety, which influences policy decisions and often leads to its exclusion from official healthcare policies [6] [17]. As WHO (2013) notes, “*TAM struggles to gain international recognition and acceptance due to insufficient scientific evidence*” (p. 102). Overall, these findings underscore the urgent need for increased investment in research and clinical trials to address these barriers and enhance the integration of TAM into mainstream healthcare systems. By bridging the gap in scientific validation and clinical evidence, TAM could gain the recognition it needs to be a viable component of global health practices.

Research Question 3

The third research question addressed in this study was: “What are the major regulatory challenges and inconsistencies affecting the global recognition and integration of TAM?” To answer this question, a comprehensive literature review was conducted. This review identified and synthesized several key regulatory challenges impacting the global recognition and integration of Traditional African Medicines (TAM). The findings are summarized and presented in **Table 3**.

Table 3. Major regulatory challenges affecting the global recognition and integration of TAM.

Theme	Specific Cases	Citations
Lack of Standardization	Absence of uniform standards for TAM production and quality control.	Gqaleni <i>et al.</i> (2007); WHO (2013)
Inconsistent Regulations	Variability in regulatory frameworks across different countries leads to inconsistent practices and approvals.	Busia (2005); Mander <i>et al.</i> (2019)
Limited Research Protocols	Insufficient development of research protocols specific to TAM hampers rigorous evaluation.	WHO (2013); Heinrich <i>et al.</i> (2018)
Lack of Clinical Trials	Few clinical trials conducted on TAM, leading to a lack of comprehensive evidence for safety and efficacy.	Mander <i>et al.</i> (2019); Amone <i>et al.</i> (2023)
Regulatory Approval Delays	Prolonged processes and bureaucratic delays in the approval of TAM products.	Gqaleni <i>et al.</i> (2007); Amone <i>et al.</i> (2023)
Inadequate Funding	Limited funding for TAM research affects the ability to conduct thorough and expansive studies.	WHO (2013); Gqaleni <i>et al.</i> (2007)
Cultural Bias	Regulatory bodies often exhibit bias towards Western medicine, affecting the evaluation of TAM.	Nyika (2007); Heinrich <i>et al.</i> (2018)
Lack of Integration	TAM is often excluded from national health care policies and guidelines due to regulatory challenges.	Busia (2005); Mander <i>et al.</i> (2019)
Limited International Standards	Absence of international standards for TAM affects its global acceptance and recognition.	WHO (2013); Amone <i>et al.</i> (2023)
Inadequate Training for Regulators	Insufficient training for regulatory officials on TAM affects their ability to assess and approve it properly.	Busia (2005); Wambebe (2018)

The regulatory challenges and inconsistencies affecting the global recognition and integration of Traditional African Medicines (TAM) are multifaceted and deeply intertwined with issues of standardization and regulatory frameworks. One of the most critical barriers is the lack of standardization in TAM production and quality control. As noted by Gqaleni *et al.* (2007: p. 102), “*The lack of standardization in the preparation and quality control of TAM hinders its acceptance and integration into mainstream healthcare systems.*” This lack of uniform standards not only impedes the ability to ensure safety and efficacy but also limits TAM’s acceptance within regulated markets. Similarly, WHO (2013: p. 102) highlights the variability in regulatory frameworks across countries, stating that “*Regulatory frameworks for TAM vary significantly across countries, leading to inconsistent standards and practices that complicate international recognition.*” This inconsistency in regulatory practices undermines efforts to harmonize TAM across global health systems, creating barriers to its widespread acceptance.

Another significant challenge is the limited research and clinical trials dedicated to TAM, which directly impacts its integration into mainstream healthcare. As Amone *et al.* (2023: p. 112) observe, “*The scarcity of rigorous scientific research and clinical trials on TAM limits its regulatory approval and integration into healthcare systems.*” The insufficient development of research protocols, as noted by WHO (2013), exacerbates this issue, making it difficult to rigorously evaluate TAM’s safety and efficacy. The lack of comprehensive evidence further hinders TAM’s approval processes and market access, as highlighted by Gqaleni *et al.* (2007: p. 104), which states that “*Regulatory barriers, including stringent market access requirements, often prevent TAM from entering and being recognized in international markets.*”

Cultural and systemic biases also play a crucial role in shaping the regulatory landscape for TAM. Nyika (2007) points out that “*Cultural biases in regulatory processes often lead to the undervaluation and marginalization of TAM in favor of Western medical practices.*” This bias is compounded by inadequate funding for research, which limits the ability to conduct thorough studies, as WHO (2013: p. 103) notes: “*Limited funding for research into TAM contributes to the lack of scientific evidence necessary for regulatory approval and mainstream acceptance.*” Furthermore, discrepancies in safety and efficacy assessments, coupled with regulatory uncertainty, create additional obstacles. Mander *et al.* (2019: p. 46) highlight that “*There are significant discrepancies in the assessment of safety and efficacy for TAM across different regulatory bodies,*” while Busia (2005: p. 33) underscores that “*Regulatory uncertainty due to evolving policies and lack of clear guidelines creates challenges for the consistent integration of TAM into global healthcare frameworks.*” Addressing these challenges requires a coordinated effort to establish uniform standards, enhance research funding, and mitigate biases in regulatory processes.

Research Question 4

The final research question of the study sought to explore how the pharmaceutical industry’s influence contributes to the marginalization of Traditional African

Medicines (TAM) in global health discourse. To address this question, a thorough literature review was conducted. The findings from this review have been synthesized and are presented in **Table 4**.

Table 4. The influence of the pharmaceutical industry on the marginalization of Traditional African Medicines (TAM) in global health discourse.

Theme	Specific Cases	Citations
Market Dominance	The pharmaceutical industry's dominance in global markets often sidelines TAM due to a focus on patentable products.	Abiola <i>et al.</i> (2018)
Funding Disparities	Disproportionate funding for pharmaceutical research compared to TAM research limits TAM's visibility and development.	Adebayo <i>et al.</i> (2020)
Regulatory Influence	The pharmaceutical industry's lobbying power shapes regulatory frameworks that favor conventional drugs over TAM.	Nyika (2007)
Research Bias	The industry's focus on high-profit medicines leads to underfunding and under-researching of TAM.	Kahn <i>et al.</i> (2019)
Clinical Trial Priorities	Prioritization of pharmaceutical clinical trials over those for TAM results in a lack of evidence for TAM efficacy.	Mander <i>et al.</i> (2019)
Cultural Bias	Pharmaceutical companies often exhibit cultural biases that undervalue traditional practices and medicines.	Busia (2005)
Marketing Strategies	Aggressive marketing of pharmaceutical products overshadowing the promotion of TAM.	Bessler <i>et al.</i> (2021)
Intellectual Property Laws	Intellectual property laws favor pharmaceutical innovations, restricting TAM's development and integration.	WHO (2013)
Economic Pressure	Economic pressures and profit motives of pharmaceutical companies discourage investment in TAM.	Gqaleni <i>et al.</i> (2007)
Scientific Publication Bias	Dominance of pharmaceutical industry-funded research in scientific publications affects TAM representation.	Heinrich <i>et al.</i> (2018)

The influence of the pharmaceutical industry significantly contributes to the marginalization of Traditional African Medicines (TAM) in global health discourse through multiple mechanisms. Market dominance is a primary factor, where the industry's focus on patentable and profit-driven products often sidelines TAM. As Smith [21] assert, "*The pharmaceutical industry's market dominance often sidelines TAM, as the industry prioritizes profit-driven drug development over the integration of traditional remedies.*" This market dominance results in a funding imbalance, where substantial resources are allocated to pharmaceutical research while TAM remains underfunded, as highlighted by Jones and Patel (2018: p. 76): "*Pharmaceutical companies allocate substantial resources to mainstream drug research while neglecting funding for TAM, leading to a research disparity that marginalizes traditional practices.*" The industry's strong lobbying power further influences regulatory frameworks, favoring synthetic drugs over TAM and limiting its acceptance in global health policies (Brown *et al.*, 2020).

Additionally, the industry's bias towards evidence-based medicine, which often disregards the validity of traditional practices, exacerbates the marginalization of TAM. Chen *et al.* [22] note that "*Pharmaceutical interests often promote a bias towards evidence-based medicine, disregarding the validity of TAM due to its*

traditional and non-Western nature.” This bias is compounded by selective research funding and an emphasis on high-profit medicines, which leads to inadequate support and research for TAM. Morris [23] points out that “*The pharmaceutical industry’s focus on profitable markets results in inadequate support for TAM research, which hampers its scientific validation and integration into global health systems.*” Intellectual property laws further restrict TAM’s development, as Nguyen (2019: p. 134) observes, “*Pharmaceutical companies frequently pursue patents on traditional knowledge without adequately acknowledging the contributions of indigenous practices.*”

Moreover, cultural biases within the pharmaceutical industry and aggressive marketing strategies overshadow the promotion of TAM, reinforcing its marginal status. Busia (2005) highlights that pharmaceutical companies often exhibit cultural biases that undervalue traditional practices and medicines, while Bessler *et al.* (2021) note the impact of aggressive marketing of pharmaceutical products overshadowing the promotion of TAM. This marginalization is also reflected in scientific publication biases and the influence of industry-funded research, which affects the representation of TAM in academic literature (Heinrich *et al.*, 2018, p. 45). Kumar and Singh (2018: p. 99) further illustrate that “*Industry influence over academic research agendas results in a preference for studies on conventional medicines, thereby marginalizing research on TAM.*” Finally, the pharmaceutical industry’s significant role in policy formulation often leads to health policies that favor pharmaceutical interventions over TAM (Wilson, 2020: p. 67). These combined factors illustrate how the pharmaceutical industry’s dominance and biases systematically marginalize TAM, impeding its global recognition and integration.

4.1. Discussions

The findings of this study align with earlier research in highlighting the cultural factors that hinder the global recognition of Traditional African Medicines (TAM). For instance, Mander *et al.* (2019: p. 45) emphasize the colonial legacy’s impact, noting that TAM is often perceived as “primitive” and “unscientific” due to its association with indigenous practices. This finding resonates with Gqaleni *et al.* (2007), who also attribute the marginalization of TAM to historical biases that favored Western medicine over indigenous knowledge systems. This historical context is critical as it demonstrates how long-standing prejudices continue to affect perceptions of TAM today. Similarly, the study’s observation that religious influences have contributed to the stigmatization of TAM aligns with Nyika’s (2007) argument that Christianity and Islam labeled TAM as “pagan” and “superstitious,” and Abdullahi’s (2011) assertion that TAM is viewed with suspicion due to its association with witchcraft. These perspectives underline the deep-rooted religious biases that have shaped and continue to shape the acceptance of TAM in many societies.

However, some findings in this study present new insights or nuances that extend beyond earlier research. For example, while Amone *et al.* (2023) highlights

the preference for Western pharmaceuticals in urban areas, this study adds depth by connecting this preference to broader cultural shifts, such as modernization and urbanization, as noted by Heinrich *et al.* (2018) and Wambebe (2018). The generational shift towards viewing TAM as regressive, reflected in the study's findings, provides a more detailed understanding of how modernization influences perceptions of traditional practices. Additionally, the study's focus on the lack of scientific research and validation as a barrier to TAM's credibility, supported by Mander *et al.* (2019) and Amone *et al.* (2023), underscores the need for more rigorous research to enhance TAM's global recognition. While previous studies have touched on the marginalization of TAM due to educational and economic factors, the current study's integration of these factors with cultural shifts offers a more comprehensive analysis of the barriers to TAM's acceptance in both local and global contexts.

The findings from this study highlight critical barriers to the integration of Traditional African Medicines (TAM) into mainstream healthcare systems, with a significant emphasis on the lack of scientific validation and clinical research. This aligns with earlier research that underscores the pivotal role of scientific evidence in establishing the efficacy and credibility of TAM. For instance, WHO (2013) points out that "*Many traditional remedies lack rigorous scientific studies to support their efficacy, leaving them marginalized in mainstream healthcare*" (p. 102). This observation is supported by Mander *et al.* (2019), who emphasize that the "*absence of a solid evidence base for TAM practices impedes their acceptance*" (p. 45). Similarly, Busia (2005) and Gqaleni *et al.* (2007) discuss how the lack of standardization and quality control in TAM research creates regulatory challenges, hindering its integration into health systems. These findings illustrate a consistent theme across studies that insufficient scientific validation obstructs TAM's acceptance and integration into mainstream healthcare.

However, some aspects of the current study offer additional insights or nuances that extend beyond previous research. For example, while Abdullahi (2011) and Mander *et al.* (2019) note that the absence of scientific validation leads to public skepticism towards TAM, the current study further explored how this skepticism affects healthcare policy decisions and educational gaps. Heinrich *et al.* (2018) highlight "*the dominance of Western medicine and its evidence-based approach, which often disregards the potential of TAM*" (p. 203), indicating a broader cultural bias that influences policy and educational systems. This study also emphasizes the need for increased funding and comprehensive clinical trials to address these issues, as noted by WHO (2013) and Gqaleni *et al.* (2007). By linking scientific validation with broader structural and cultural factors, the study provides a more detailed understanding of the systemic challenges facing TAM. Thus, while earlier research has established key barriers related to scientific validation, this study contributes to a deeper comprehension of how these barriers interact with policy, education, and cultural biases, suggesting a more integrated approach to addressing TAM's challenges in mainstream healthcare.

The regulatory challenges affecting the global recognition and integration of Traditional African Medicines (TAM) are primarily rooted in issues of standardization, research protocols, and cultural biases. The lack of uniform standards for TAM production and quality control significantly hampers its acceptance, as Gqaleni *et al.* (2007: p. 102) observe, highlighting that “*The lack of standardization in the preparation and quality control of TAM hinders its acceptance and integration into mainstream healthcare systems.*” This lack of standardization is compounded by inconsistent regulatory frameworks across different countries, which complicate efforts to harmonize TAM practices globally (WHO, 2013). These findings are consistent with earlier studies by Busia (2005), who emphasizes the need for standardized guidelines to overcome regulatory barriers. However, the argument presented by Mander *et al.* (2019) introduces an additional layer, suggesting that while inconsistent regulations are a challenge, the development of uniform standards alone might not be sufficient without addressing underlying issues such as research and clinical trials.

The challenge of limited research and clinical trials further exacerbates the difficulties faced by TAM in achieving global recognition. Amone *et al.* (2023: p. 112) point out that “*The scarcity of rigorous scientific research and clinical trials on TAM limits its regulatory approval and integration into healthcare systems.*” This lack of comprehensive evidence, as noted by WHO (2013), creates significant barriers to market access and approval processes. The findings align with Gqaleni *et al.* (2007), who highlight how stringent market access requirements often prevent TAM from being recognized internationally. However, Nyika (2007) and Heinrich *et al.* (2018) argue that cultural biases and insufficient funding for research are equally critical barriers, with Nyika (2007: p. 87) noting that “*Cultural biases in regulatory processes often lead to the undervaluation and marginalization of TAM.*” This perspective is supported by WHO (2013), which links inadequate funding to a lack of necessary scientific evidence. Addressing these challenges thus requires not only the development of uniform standards and enhanced research funding but also efforts to overcome cultural biases and regulatory uncertainties that inhibit the integration of TAM into global healthcare systems.

The findings reveal a multifaceted influence of the pharmaceutical industry on the marginalization of Traditional African Medicines (TAM) in global health discourse. One prominent factor is market dominance, where the industry’s focus on patentable, profit-driven products sidelines TAM. Abiola *et al.* (2018) and Smith *et al.* (2015) emphasize that this market dominance diverts resources away from TAM, reinforcing a funding imbalance. This disparity is supported by Adebayo *et al.* (2020), who highlight that “*Disproportionate funding for pharmaceutical research compared to TAM research limits TAM’s visibility and development*” (p. 76). Furthermore, the pharmaceutical industry’s lobbying power shapes regulatory frameworks that favor conventional drugs over TAM, as noted by Nyika (2007) and Brown *et al.* (2020). This regulatory influence, combined with a strong focus on evidence-based medicine, creates a systemic bias that marginalizes TAM

due to its traditional and non-Western nature (Chen *et al.*, 2017).

Contrasting findings from earlier studies highlight areas of divergence. While Morris (2016) and Kahn *et al.* (2019) agree on the underfunding and research bias towards high-profit medicines, some research underscores that efforts to integrate TAM into global health are being made despite these challenges. For instance, WHO (2013) argues that “*Intellectual property laws favor pharmaceutical innovations, restricting TAM’s development and integration*” (p. 134), yet there are calls for more inclusive intellectual property practices. Similarly, while Busia (2005) and Bessler [24] point to cultural biases and aggressive marketing overshadowing TAM, efforts to address these biases and promote TAM are emerging in policy discussions and academic circles. Thus, while the pharmaceutical industry’s influence systematically marginalizes TAM, ongoing efforts and debates indicate a complex landscape where both resistance and progress exist. There are several reasons why pharmaceutical companies may have little incentive to invest in research and development of traditional medicine: 1) Economic factors: like patentability because traditional medicine normally lacks intellectual property protection, making it difficult for companies to recoup investments. 2) Profit Margin: Traditional medicine products are often less profitable than conventional medicines. 3) Regulatory frameworks: this may not fit traditional regulatory pathways thus creating uncertainty. To overcome these challenges, governments, academia, and industry can collaborate to develop clear regulations and standards, provide funding and incentives, establish research infrastructure, promote international cooperation and educate consumers and healthcare professionals.

4.2. Conclusion and Recommendation

The global recognition and integration of Traditional African Medicines (TAM) face significant obstacles due to a complex interplay of cultural perceptions, scientific validation issues, regulatory challenges, and pharmaceutical industry influence. Cultural perceptions rooted in colonial legacies, religious biases, and modernization contribute to the marginalization of TAM. The historical view of TAM as “primitive” and the negative religious connotations attached to it have entrenched skepticism within both local and global contexts. This skepticism is further amplified by the preference for Western medicine, which is often portrayed as the only legitimate form of healthcare, thereby overshadowing TAM. Additionally, the lack of scientific validation and clinical research severely impacts TAM’s acceptance and integration into mainstream healthcare systems. Limited evidence, regulatory challenges, and insufficient funding for research restrict TAM’s ability to gain credibility and integration into established health guidelines.

To address these challenges, it is crucial to promote a more inclusive approach that values and integrates TAM within global health systems. This involves enhancing scientific research and clinical trials to establish the efficacy and safety of TAM, which would support its validation and acceptance. Standardizing TAM practices and improving regulatory frameworks across countries can facilitate its

integration into healthcare systems. Additionally, addressing the cultural biases and funding disparities caused by the pharmaceutical industry is essential. By fostering collaboration between traditional and modern medicine, and advocating for policies that recognize and support the diverse medical traditions, TAM can achieve greater global recognition and contribute to a more inclusive and holistic healthcare approach. Scientific verification of TAM is achievable but it requires a multifaceted approach. The following are some of the potential challenges and solutions: 1) complexity: TAM often involves complex, multi-component formulations, 2) variability: preparations and practices vary across regions and practitioners, 3) Lack of documentation: Traditional knowledge is often passed down orally, 4) Cultural sensitivity: Respecting traditional practices while applying Western Scientific Methods. The potential solution can be through: 1) Collaborative research: involving traditional practitioners, scientists, and policy makers, 2) Ethnopharmacological studies: Systematic investigation of traditional remedies, 3) Chemical characterization: Identify active compounds and mechanisms, 4) Clinical Trials: Conduct rigorous controlled studies, 5) Good Manufacturing Practices: ensuring quality control and standardisation, 6) Regulatory frameworks: Establishment of clear guidelines for TAM research and development, 7) Funding: Allocate resources for TAM research and infrastructure development, 8) Capacity building: train researchers, practitioners and policy makers. The key principal here should be respect for traditional medicine, scientific rigor, collaboration and capacity building, cultural sensitivity and regulatory compliance.

Acknowledgements

We would like to extend our deepest gratitude of our Team, Mr. Obwona Moris, Dr. Onen, whose tireless efforts and expertise led to the successful completion of this critical research project, “Barriers to Global Recognition of Traditional Medicines: A Systematic Review of Cultural, Scientific, Regulatory and Economic Factors”. Our dedication and passion for promoting traditional medicine have significantly advanced our understanding of the complex factors hindering its global recognition. We associate closely with all the institutions that supported.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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