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Strengthening Safety Regulations For E-Marketing of Herbaceutical Products

Nurzahidah Jaapar^{1*}✉, Farrah Payyadah Borhan¹, Shofiyyah Moidin¹, Sharifah Fadylawaty Syed Abdullah¹

¹Academy of Contemporary Islamic Studies, Universiti Teknologi MARA, 40450 Shah Alam, Malaysia

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ABSTRACT

In the realm of marketing, relevant stakeholders need to consider the potential consequences of non-compliance with stipulated regulations. These consequences include adverse impacts resulting from advertisements, the exploitation of certain demographics, detrimental effects on public health, and violations of legal statutes. Hence, it is essential to ensure that all aspects of e-marketing are thoroughly validated in accordance with relevant regulations and legal frameworks before its publication. This article aims to explore marketing trends for herbaceutical products and evaluate the safety regulations governing e-marketing in Malaysia. Several authorities were interviewed, and selected regulations were examined to determine whether appropriate safety measures were implemented. The findings suggest that certain regulations require reassessment to enhance safety regulations for the e-marketing of herbaceutical products.

INTRODUCTION

The concept of integrative medicine is becoming more popular in the contemporary healthcare sector, particularly in the management of chronic lifestyle diseases including neurological disorders (Jaapar et al., 2022). The growing global acceptance of diverse healthcare approaches is expected to significantly impact the future of herbaceutical concepts and products, which have a long-standing history of safe usage and are backed by substantial scientific research. Currently, there is a noticeable revival of interest in herbaceutical medicine on a global scale (Muralidhara & Rajini, 2023). Consequently, now is an ideal time for national initiatives to align with this momentum, fostering developments with a keen focus on three crucial factors: the quality, effectiveness, and safety of new, potentially valuable herbaceutical healthcare innovations.

In Malaysia, the traditional medicinal products industry, often referred to as the herbaceutical sector, has the potential to emerge as a significant contributor to the country's economic landscape. This potential is underpinned by substantial investments in research and development, as articulated in the strategic policy framework spanning from the Ninth Malaysia Plan (RMK9) to the Eleventh Malaysia Plan (RMK11), with

^{2*} Corresponding author. E-mail address: nurzah8883@uitm.edu.my
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a particular focus on the herbal medicine sector (Economic Planning Unit Malaysia, 2006). Furthermore, the advancement of bio-economic development rooted in herbal plants plays a pivotal role within the national economic development agenda, with a particular emphasis on the revitalization of the rural economy. This strategic endeavor aligns with the objectives outlined in the Socio-Economic Transformation Plan (SETP) (Economic Planning Unit, 2015).

However, the rapid growth of e-marketing for herbaceutical products has introduced new challenges in maintaining consumer safety and product integrity. Despite the increasing popularity of these products due to their natural and health-promoting properties, many herbaceuticals sold online lack proper regulatory oversight. Variations in safety standards, unverified claims, and the potential presence of harmful substances in some products pose significant risks to consumers. Without robust safety regulations, the global herbaceutical market could see an influx of substandard or unsafe products, which may undermine consumer trust and lead to potential health hazards.

Moreover, the decentralized nature of e-commerce platforms complicates the monitoring and enforcement of safety regulations, making it easier for sellers to bypass quality controls and legal requirements. Many herbaceutical products are sold without adequate clinical validation or proper labeling, which further increases the risks of misinformation and misuse. Strengthening safety regulations for the e-marketing of herbaceutical products is, therefore, crucial to protect consumers, promote transparency, and maintain the credibility of the herbaceutical industry. Implementing stricter oversight measures, such as mandatory product testing, certification, and improved online monitoring systems, can mitigate these risks and ensure that only safe, high-quality products reach consumers. The growing popularity of herbaceutical products in e-marketing has raised concerns about consumer safety due to inconsistent regulatory oversight. Many products sold online may not meet safety standards, posing risks due to unverified claims and harmful ingredients. This article aims to explore the market trends for herbaceutical products in Malaysia and evaluate the effectiveness of safety regulations governing their online sale, to improve consumer protection and ensure product quality in the digital marketplace.

The Herbaceutical Market Trends

The establishment of medicinal product development based on the traditional herbal plant knowledge base represents an imperative initiative that warrants strategic mobilization as a novel driver of the nation's economic growth (Forest Research Institute Malaysia, 2019). This initiative is firmly rooted in the market potential of the domestic herbal industry, which recorded sales amounting to RM10 billion in 2008 and is projected to increase significantly to RM32 billion by the year 2020 (Ismail & Mohd Mokhtar, 2017; ECER, 2011). The accelerated expansion of the business sector can be attributed to the heightened acceptance of herbal products within various domains, including traditional medicine, alternative therapies, functional foods, supplementary health provisions, natural personal care items, and organic food offerings (National Centre for Complementary and Integrative Health, 2021).

This phenomenon is further bolstered by the progress witnessed in the Malaysian herbal industry, marked notably by its exploration of the legal use of medical cannabis as a viable alternative treatment modality (Mutalib, 2022). In line with this, the potential for the herbal market's expansion through the discovery of novel species presents a valuable opportunity for stakeholders within the Malaysian herbal industry to capitalize on both domestic and international markets. This aligns with the principles outlined in the National Biodiversity Policy (2016-2025), which states that native plants and animals in Malaysia are very useful as a basis for traditional medicinal products. Rural communities in most areas of Malaysia still rely on traditional medicine for their healthcare needs (Noor, 2017). It is estimated that around 1,200 plant species in Peninsular Malaysia and 2,000 species in Sabah and Sarawak have medicinal potential and are used in traditional healthcare (Ministry of Natural Resources and Environment, 2016). The list of traditional herbal plants issued by Malaysia is shown in the table below:

Table 1: Traditional Herb Production Value Statistics by Categories in 2023

Herbal Categories	2023 (ton)
Eurycoma longifolia Jack (Tongkat Ali)	0.66
Centella asiatica (Pegaga)	25.87
Orthosiphon stamineus (Misai Kucing)	31.80
Ficus deltoidea (Mas Cotek)	5.23
Zingiber officinale Var. rubrum Theilade (Halia Bara)	2.76
Morinda citrifolia (Mengkudu)	15.92

Source: Department of Agriculture (2022)

In Malaysia, the herbaceutical and health product sectors also demonstrate significant potential for growth within the global halal industry, as indicated by the Halal Development Corporation (HDC) in 2020 (HDC, 2020). The increasing demand for herbaceutical products, generic medicines, and wellness and healthcare products, such as halal gelatin, halal vaccines, halal nutraceuticals, and halal homeopathy, is projected to reach approximately USD 134 billion by 2024. This growth trajectory aligns with the objectives outlined in the Halal Industry Master Plan 2030, wherein the herbaceutical, nutraceutical, and healthcare industries have propelled Malaysia to second place in the Global Islamic Economic Report (GIER) indicator rankings. This ranking attests to Malaysia's prowess in providing halal health products to both domestic and international consumer audiences (State of the Global Islamic Economy Report, 2019). Hence, the manufacturing of traditional medicinal products assumes a significant role in the national economic landscape, driven by the robust demand within the halal market sector, both domestically in Malaysia and on the international stage (Hussain, 2020). Data from the HDC for the years 2019 to 2021 reveal that significant contributors to the halal export sector encompass industries such as halal food and beverages, pharmaceuticals, and cosmetics, as presented in the table below:

Table 2: Statistics of Malaysia Halal Export Contributors Year 2019-2023

Halal scheme	Export value				
	2019	2020	2021	2022	2023
Food & beverage	RM 20.0 bilion	RM 22.05 bilion	RM17.04 bilion	RM44.5 bilion	RM 46.47 bilion
Cosmetics & personal care	RM 3.0 bilion	RM 2.95 bilion	RM 2.7 bilion	USD 154 bilion	USD 168 bilion
Halal pharmaceuticals	RM 400 bilion	RM 400.9 bilion	RM300 bilion	USD 261 bilion	USD 360 bilion

Source: HDC (2020)

Table 3: Muslim spending on halal goods globally from 2018 to 2030

Halal scheme	2018	By 2030
Halal Food & beverage	1.4 trillion USD	2.0 trillion USD
Cosmetics & personal care	64 billion USD	10.5 USD
Halal pharmaceuticals	92 billion USD	134 billion USD

Source: State of the Global Islamic Economy Report (2019)

Statistics extracted from the HDC and the Malaysia Halal Industry Plan for the period spanning 2018 to 2030 elucidate that prominent contributors within the halal export sector include industries such as halal food and beverages, pharmaceuticals, and cosmetics, as comprehensively detailed in the accompanying table (Abu-Hussain et al., 2017). This trend is supported by growing awareness of healthcare, population aging, the prevention of chronic diseases, epidemics, and current lifestyle changes, which encourage consumers to opt for traditional medicine sourced from nature (both natural and organic) as a supplement to maintain their health (Ismail et al., 2020; World Health Organization, 2013).

Beyond the strong confidence exhibited by domestic consumers in the efficacy of traditional medicine, the substantial surge in demand for these products can be attributed to the global proliferation of internet access. This trend is further propelled by continuous and dynamic advancements in online marketing technologies embraced by manufacturers and advertisers of traditional medicinal products. Consequently,

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this has revitalized the traditional medicine sector within the industry, resulting in a diverse array of appealing traditional medicinal products for the consumer audience. At the same time, it has created substantial marketing prospects for local industry participants to leverage (Amira et al., 2018; Yoshida et al., 2015). The socioeconomic profiles of users constitute an additional determinant in the widespread adoption of traditional medicinal products, driven by their affordability, ready availability, and the cultural and environmental factors that influence the market supply of such products (Komari et al., 2020). Meanwhile, traditional medicine continues to hold a pivotal position within the healthcare industry, particularly in primary healthcare (World Health Organization, 2013).

Drawing from the historical utilization of herbal and traditional medicine, the incorporation of natural remedies into healthcare has evolved into a cultural practice deeply embedded in daily life, with the overarching objective of enhancing well-being and overall health (Morris & Avorn, 2003). Notably, data provided by the World Health Organization (WHO) indicates that traditional medicine is used by 60% of the global population and is integrated within the healthcare systems of numerous nations, spanning both developed and developing countries (World Health Organization, 2019). This aligns with the objectives outlined in Sustainable Development Goal 3 (SDG 3), which seeks to attain universal health coverage by promoting healthy lives and well-being for individuals of all age groups (James & Bhatnagar, 2020). In Malaysia, herbal products and traditional medicines are regarded as alternative therapeutic modalities, supplements, and complementary treatments that enjoy widespread popularity among the populace. As reported by the National Pharmaceutical Regulatory Agency (NPRRA), the registration rate for traditional medicinal products was 65.05%, accounting for 175 products out of a total of 269 registered medicinal products as of October 2021. The table below provides a listing of the registered companies.

Table 4: Registration of registered products under the National Pharmaceutical Regulatory Agency (NPRRA)

Companies	Categories of medicine	Companies	Categories of medicine
21st Century Products Sdn. Bhd.	TMHS	Halagel Plant (M) Sdn. Bhd.	TMHS
Bioalpha International Sdn. Bhd	TMHS	HPA Industries Sdn. Bhd.	TM
F.A. Herbs Sdn. Bhd	TM	Multi Herbs Pharmaceutical (M) Sdn. Bhd.	TMHS
DS Pharma Herbs Sdn. Bhd.	TM	Phyto Herbal Industries Manufacturing Sdn. Bhd.	TMHS
Era Herbal Products Sdn. Bhd	TM	Sendayu Tinggi Manufacturing (M) Sdn. Bhd.	TM
Gamat Asli Enterprise	TM	Zhulian Nutraceutical Sdn. Bhd.	TMHS

Source: NPRRA (2021)

Statistics and reports on products registered with the NPRRA show data that aligns with the concept of "demand and supply," which explains the popularity of traditional medicinal products in both local and global markets (Ahaiwe, 2019). Hence, continuous oversight is essential in the sale and marketing of traditional medicine to uphold and guarantee compliance with consumer safety standards (Ismail & Mohd Mokhtar, 2017). Currently, the marketing of traditional medicinal products in Malaysia falls under the remit of the NPRRA through the Medicines (Advertisement and Sale) Act 1956, the Drug and Cosmetics Control Act 1984, the Sales of Drugs Act 1952, the Poisons Act 1952, and related guidelines to ensure that the marketing of medicine in Malaysia is regulated and safeguarded against potential harm (Drug Advertisement Board, 2019).

Notwithstanding the existing regulations, vigilant oversight of the marketing of traditional medicine is imperative, aligning with the registration process to ensure the safety, quality, and efficacy of these medicines. Post-marketing surveillance is equally significant, as it enables the swift recall of potentially harmful products from the market while also disseminating sufficient information to empower consumers in making informed decisions (Ismail et al., 2020). The Malaysian Drug Control Authority (DCA) diligently implements post-marketing controls to oversee the quality of registered products within the market, thereby mitigating safety risks. Notably, in 2019, reports indicated that approximately 50 traditional health products were prohibited due to the inclusion of scheduled poisons, with a significant proportion found to be non-compliant with registration requirements (NPRRA, 2021). Hence, it is incumbent upon consumers to exercise

discernment when making decisions based on advertisements for traditional medicinal products. This discernment should encompass scrutiny of factors such as the Ministry of Health Malaysia (MOH) registration number, adherence to Good Manufacturing Practices (GMP), possession of a halal certificate, and other relevant information, all aimed at mitigating potential safety risks (Ismail et al., 2019).

Standard and regulation governing herbal medicine in Malaysia

In Malaysia, the regulation of herbal medicine, including herbaceutical products, is governed by several standards and guidelines to ensure product safety, quality, and efficacy. The main regulatory frameworks for herbal medicine include:

Table 5: Standard and regulation governing herbal medicine in Malaysia

Regulation/Standard	Description	Purpose
Control of Drugs and Cosmetics Regulations 1984	Herbal medicines must be registered with the NPRA before marketing. Products are assessed for safety, efficacy, and quality.	Ensure herbal products meet Malaysian health standards before they are marketed.
NPRA Guidelines for Traditional Medicines	Herbal products must undergo stability testing, toxicity evaluations, and contamination assessments. Proper labeling is required.	Ensure the safety, efficacy, and transparency of herbal products.
Good Manufacturing Practices (GMP)	Manufacturers must follow GMP standards to ensure products are produced under controlled, hygienic conditions to prevent contamination.	Maintain consistency and safety in herbal medicine production.
Malaysian Code of Advertising Practice & Medicines (Advertisement and Sale) Act 1956	Advertising must adhere to ethical guidelines, avoiding unsubstantiated claims. The Medicines Advertisements Board oversees compliance.	Prevent misleading or exaggerated advertising claims about herbal products.
Herbal Product Registration with NPRA	Herbal medicines must have a MAL registration number and Meditag hologram to verify they are approved by the NPRA.	Provide assurance of product safety and regulatory approval to consumers.
Traditional & Complementary Medicine Act 2016 (Act 775)	Establishes a legal framework for the practice of traditional and complementary medicine. Practitioners must be registered and adhere to professional standards.	Regulate and maintain professional standards in the practice of traditional and complementary medicine.

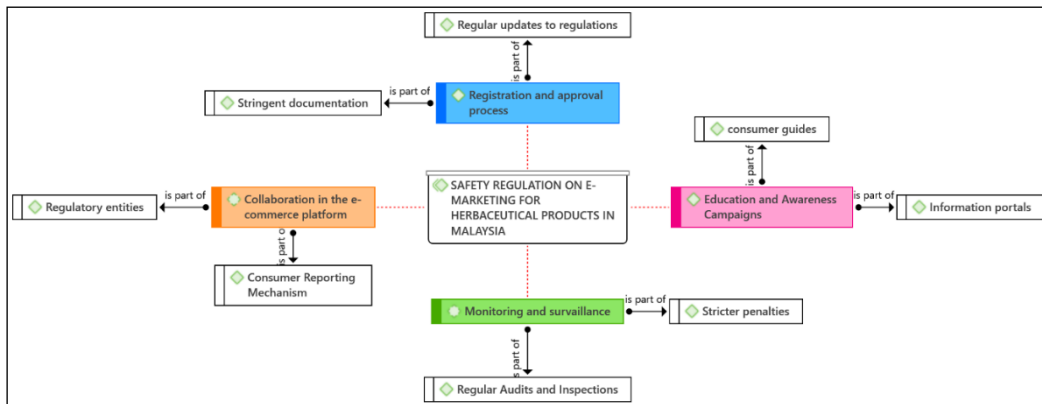
Source: Control of Drugs and Cosmetics Regulations 1984; National Pharmaceutical Regulatory Agency, n.d.; Medicines (Advertisement and Sale) Act 1956; Traditional and Complementary Medicine Act 2016 (Act 775)

Methodology

This qualitative study employs a research methodology that involves conducting interviews with several regulatory authorities responsible for overseeing the marketing of traditional medicinal products on social media platforms. The authorities include the NPRA under the Ministry of Health Malaysia, the Malaysian Communications and Multimedia Commission (MCMC), and experts in the field of regulatory affairs. These interviews aim to gain insights into the regulatory framework and practices of the marketing of traditional medicinal products in the context of social media. The information obtained through these interviews will be analyzed to provide a comprehensive understanding of the regulatory landscape surrounding the online marketing of traditional medicinal products.

The Safety Regulation On E-Marketing for Herbaceutical Products In Malaysia

Figure 1: Safety Regulation on E-Marketing for Herbaceutical Products in Malaysia



Source: Author (2025)

Registration And Approval Process

To strengthen regulatory control, authorities can require all herbaceutical products to go through a formal registration process before they are allowed to be marketed. The registration and approval process for herbaceutical products in Malaysia is overseen by NPRA under the Ministry of Health Malaysia. Prior to registration, herbaceutical manufacturers or distributors must compile essential documentation, including product formulation, manufacturing details, safety data including clinical trials and toxicology studies, quality control procedures, bilingual labelling, and ingredient sourcing information. The enhancement includes:

(i) Stringent Documentation

“The Drug Registration Guidance Document (DRGD) by NPRA ensures stringent procedures for applications to be in place to safeguard safety controls” (NPRA Officer)

According to the NPRA officer, the practice of stringent documentation requirements entails the imperative for herbaceutical manufacturers and marketers to furnish meticulous and comprehensive data regarding their products. This documentation encompasses exhaustive elucidations about the product's compositional formulation, constituent ingredients, intricacies of the manufacturing processes employed, stringent quality control protocols adhered to, and substantiating safety and efficacy studies. It could be explained that when a research organization aims to share its discoveries about an herbal supplement, it is required to provide very detailed documentation. The origin of the herbs used in the supplement, the extraction method employed, whether any additional substances were introduced, and the inclusion of compelling evidence demonstrating the safety and effectiveness of the product should be clarified in this documentation.

Consequently, this evidence can be derived from clinical trials or historical records of use. For instance, if a company is introducing a new herbaceutical supplement containing turmeric extract, the documentation must clearly outline the source of the turmeric, including its geographic origin and cultivation practices. The extraction process, whether it involves water, alcohol, or another solvent, must be described in detail, along with any additives or preservatives introduced during manufacturing. Moreover, to demonstrate

safety and effectiveness, the company would need to provide clinical trial results showing the product's efficacy in reducing inflammation or historical usage records that indicate its safe consumption over centuries. This comprehensive data assures regulatory authorities of the product's reliability.

(ii) Regular Updates on Regulations

“If any website contains inappropriate content, the MCMC will assess it and maintain a checklist to remove any material that violates the Communications and Multimedia Act 1988” (MCM Officer).

Based on the above statement, regular updates on e-marketing regulations for herbaceutical products in Malaysia are vital to align with industry changes, emerging technology, and consumer expectations. These updates safeguard consumers by ensuring accurate information, reflecting evolving scientific knowledge, and addressing new marketing avenues like social media and mobile apps, promoting responsible and ethical marketing. They also aim to align national regulations with international standards to facilitate international trade, enforce stricter quality standards including GMP and safety testing to ensure product safety, and adapt regulations to meet changing consumer needs by improving clarity on allergens, usage, and product information. Additionally, they help evolve rules to govern digital marketing claims by ensuring accuracy and substantiation, while also incorporating measures for digital privacy and security to safeguard customer data.

If a business owner does not update their e-marketing practices to match current regulations, they might face serious issues if their herbaceutical product needs to be recalled due to safety concerns. For example, outdated marketing could mislead consumers about the product's safety, leading to potential health risks. Additionally, if regulations on data privacy and security are not followed, the recall process could be mishandled, leaving consumers uninformed and increasing legal risks. Therefore, keeping up with e-marketing regulations is essential for accurate communication and effective recall management.

(iii) Monitoring And Surveillance

Monitoring and surveillance of e-marketing for herbaceutical products play a critical role in ensuring consumer safety, fair competition, and regulatory compliance. It helps to protect consumers from misleading or false advertising claims. Regulatory authorities can identify and investigate misleading marketing practices that could harm consumers or lead to misinformation about herbaceutical products. By monitoring trends and consumer complaints, regulatory authorities can respond quickly to emerging risks or safety concerns associated with herbaceutical products, reducing potential harm.

(iv) Regular Audits And Inspection

“KKLIU can monitor websites or service providers that violate the law, and they have the authority to request the removal of advertisements because they are better equipped to instruct product owners to take down overclaiming and misleading advertising content. At MCMC, we will assist by blocking such accounts from being displayed on social media platforms” (MCMC Officer).

Depending on the nature of the product and the documentation provided, the NPRA may require product samples for testing, which can include quality control checks and safety assessments. After approval and registration, the product remains subject to post-market surveillance, meaning the NPRA will continue to monitor its safety and quality, and manufacturers must comply with ongoing regulatory requirements. Regular audits and inspections are crucial for ensuring compliance in the e-marketing of

herbaceutical products. For example, if a company's online advertisement for a herbal supplement makes exaggerated claims about its health benefits, regular audits by authorities such as KKLIU can identify these misleading statements. KKLIU has the authority to instruct the removal of such advertisements, while MCMC can block offending accounts on social media platforms. Additionally, the NPRA's post-market surveillance ensures that even after a product is approved, it remains under scrutiny for quality and safety. This ongoing oversight helps prevent misleading marketing practices and ensures that products continue to meet safety standards.

(v) Stricter Penalties

“When the offense pertains to false content, it falls under Section 8 of the Consumer Protection Act 1999 under KPDNHEP, addressing the issue of consumer exploitation regarding goods deemed unsatisfactory or dangerous (KPDNHEP Officer). This is also in line with Section 3 of the Medicines (Advertisement and Sale) Act 1956, which prohibits advertisements relating to certain diseases” (NPRA Officer).

In the pursuit of promoting ethical e-marketing practices within the herbaceutical products industry, regulatory authorities should adopt a multifaceted approach. This should include the imposition of stricter penalties, particularly higher fines for offenses such as false advertising and mislabeling. Additionally, regulators should consider holding companies financially accountable for product recalls, including potential bans from major e-commerce platforms. Further measures should involve the prosecution of individuals within companies who knowingly engage in the sale of harmful or counterfeit products. To reinforce compliance, license revocation or suspension should be enforced in cases of repeated violations. Moreover, mechanisms for consumer redress and compensation should be implemented to ensure consumer protection and satisfaction. Transparency can be strengthened through the public disclosure of violations and penalties. To encourage reporting of misconduct, incentives and legal protections should be offered to whistleblowers. Regulatory frameworks should also mandate higher financial bonds and stricter liability standards for companies, enhancing adherence to regulations. Lastly, to tackle cross-border violations and prevent regulatory evasion, international collaboration among regulatory bodies should be actively pursued, thereby safeguarding consumer interests and preserving industry integrity (Shahrom et al., 2024).

(vi) Collaboration In The E-Commerce Platform

Collaboration in the e-commerce platform refers to the cooperative efforts and partnerships among various stakeholders within the e-commerce ecosystem to achieve common goals, enhance efficiency, and improve the overall experience for all parties involved. This collaboration can take various forms and includes key participants such as online retailers, manufacturers, service providers, and consumers.

“We will continually update information and collaborate closely with NPRA to monitor the e-marketing of traditional medicines” (MCMC Officer). (KPDNHEP Officer)

Regulatory oversight of traditional medicine advertisements involves collaboration among multiple agencies and the enforcement of various acts and regulations. Key entities include the Ministry of Health Malaysia (MOH), the Ministry of Domestic Trade and Consumer Affairs (MDTCA), the Traditional and Complementary Medicine Division (T&CM) of MOH, and the Department of Islamic Development Malaysia (JAKIM). Specifically, the Malaysian Pharmaceutical Enforcement Division (BRFN) holds the authority to regulate and monitor pharmaceutical product advertisements. Inter-agency collaboration is crucial in overseeing e-marketing for herbaceutical products. For instance, if a herbal product falsely claims to cure diseases online, agencies such as MCMC, NPRA, and MOH coordinate efforts to address the issue. MCMC tracks and shares information on misleading ads, while NPRA and MOH enforce regulations to

ensure compliance. Additionally, MDTCA and JAKIM help uphold safety and consumer protection standards in marketing practices. This joint effort prevents deceptive claims and safeguards consumers.

(vii) Consumer Reporting Mechanisms

"We will consistently provide the best methods in our reporting mechanisms, such as social media reporting, collaboration with authorities, and a hotline telephone number" (MOH Officer).

To enhance pharmaceutical regulation and encourage consumer involvement in reporting adverse drug reactions (ADRs) and product-related concerns, a comprehensive approach can be implemented. This includes developing an accessible online reporting portal with user-friendly web and mobile interfaces. Additionally, a toll-free hotline, staffed by healthcare professionals and available during extended hours, provides another channel for consumer complaints, inquiries, and ADR documentation. Collaboration with pharmacies and healthcare providers can further facilitate ADR reporting, leveraging their role in patient safety and feedback. A dedicated mobile application featuring ADR reporting tools, product information retrieval, and barcode scanning for quick identification enhances accessibility. Furthermore, social media monitoring tools enable proactive tracking of consumer discussions and concerns related to pharmaceutical products, ensuring timely regulatory responses.

(viii) Education And Awareness Campaigns

Consumer knowledge and awareness play a crucial role in self-regulation when purchasing herbaceutical products. By applying key evaluation criteria, consumers can exercise informed judgment and discern the credibility of herbaceutical advertisements.

"Consumer self-regulation is also necessary as they need to identify and scrutinize advertisements for traditional medicines before taking action to purchase such products" (NGO for Consumerism)

These criteria include verifying the product's approval from relevant regulatory authorities, exercising caution when evaluating claims about its benefits, and critically assessing its suitability for their specific needs. By adopting this approach, consumers actively engage in self-regulation, making well-informed choices that align with safety and quality standards while avoiding potential risks associated with misleading or deceptive advertising. In this way, consumer self-regulation serves as a proactive safeguard, protecting their interests and well-being in the herbaceutical marketplace.

(ix) Information Portals

"Information portals like the NPRA portal assist the public in reporting unlawful drug advertisements while also providing access to a list of approved pharmaceutical products and relevant legal information" (NPRA Officer).

In the context of herbaceutical e-marketing and safety regulation, information portals play a crucial role in enhancing consumer knowledge and awareness. These portals provide valuable resources where consumers can easily access detailed information on safety regulations governing herbaceutical products. With this access, consumers gain a clearer understanding of legal requirements, quality standards, and safety protocols that these products must meet. Additionally, such portals offer insights into how regulatory authorities monitor and enforce compliance within the herbaceutical industry. This transparency enables consumers to distinguish between legitimate, regulated products and those that do not meet safety standards.

By making informed choices, consumers can better protect themselves from misleading or deceptive advertising.

CONCLUSION

In conclusion, enhancing safety principles in herbaceutical e-marketing requires a multifaceted approach encompassing several key aspects. Rigorous registration and approval processes ensure that only compliant and safe herbaceutical products enter the market, safeguarding consumer well-being. Simultaneously, robust monitoring and surveillance mechanisms allow regulatory authorities to swiftly identify and address potential risks or non-compliance issues, fostering a proactive approach to consumer protection. Collaboration within e-commerce platforms, including temporary or permanent bans on non-compliant companies, promotes a safer marketplace and deters unethical practices. Additionally, education and awareness campaigns empower consumers with the knowledge and critical thinking skills needed to make informed choices, reducing the risk of falling victim to misleading advertising while fostering transparency. Together, these elements create a comprehensive framework that prioritizes consumer safety and upholds industry integrity in herbaceutical e-marketing.

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CONFLICT OF INTEREST

The authors agree that this research was conducted in the absence of any self-benefits, commercial or financial conflicts and declare the absence of conflicting interests with the funders.

AUTHORS' CONTRIBUTIONS

Nurzahidah Jaapar carried out the research, wrote and revised the article. The conceptualised the central research idea and provided the theoretical framework carried out by Nurzahidah Jaapar. Sharifah Fadylwaty Syed Abdullah designed the research, supervised research progress; Farrah Payyadah Borhan and Shofiyah Moidin anchored the review, revisions and approved the article submission.

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