

Constructs for Safe-use of Natural Health Products Among Malaysian Consumers

Nur Syamila Mohd Roziman (Corresponding author)

Institut Islam Hadhari, Universiti Kebangsaan Malaysia,

43650 UKM Bangi, Selangor, Malaysia

E-mail: p116490@siswa.ukm.edu.my

Wardah Mustafa Din

Pusat Pengajian Citra Universiti, Universiti Kebangsaan Malaysia,

43650 UKM Bangi, Selangor, Malaysia

E-mail: wardahmustafadin@ukm.edu.my

Zurina Mahadi

Pusat Pengajian Citra Universiti, Universiti Kebangsaan Malaysia,

43650 UKM Bangi, Selangor, Malaysia

E-mail: kina@ukm.edu.my

Farida Islahudin

Faculty of Pharmacy, Universiti Kebangsaan Malaysia,

Jalan Raja Muda Abdul Aziz, 50300 Kuala Lumpur, Malaysia.

E-mail: faridaislahudin@ukm.edu.my

Mazlina Md. Said

Faculty of Pharmacy, Universiti Kebangsaan Malaysia,

Jalan Raja Muda Abdul Aziz, 50300 Kuala Lumpur, Malaysia.

E-mail: mazlina.said@ukm.edu.my

Received: August 2, 2023 Accepted: September 28, 2023 Published: November 2, 2023

doi:10.5296/ijssr.v12i1.21268

URL: <https://doi.org/10.5296/ijssr.v12i1.21268>

Abstract

Since the outbreak of Covid-19 in 2020, people have become more health-conscious and thus felt responsible for taking care of their own health for long-term well-being. The public is more aware to seek extra health measures with alternative therapies as awareness of sustainable lifestyles was promoted before the vaccine was introduced. The term “natural” brings a positive attitude towards the product since most consumers perceive natural as safe even though it does not necessarily mean safer or better. There are many reports on natural health products that are adulterated with harmful substances, and many still do not have data on their efficacy, hence it is pivotal that consumers know the safe-use elements of natural health products. It is important for consumers to know and have the right knowledge regarding the safety of natural health products to prevent any adverse effects in the future. The objective of this study is to identify the safe-use elements perceived by consumers for natural health products. A qualitative approach of Focus-Group Discussion (FGD) is employed to elucidate the safe-use elements, and thematic analysis is being done on the qualitative data to explore the objective. There are 11 safe-use elements of natural health products mentioned by consumers. However, there is only 1 safe use element that is in line with the current regulation in Malaysia. A complete guideline on the safe use of natural herbal products for consumers is pivotal to maintain their general health and well-being.

Keywords: natural health products, safe use, qualitative, consumers

1. Introduction

Since the outbreak of Covid-19 in 2020, people have become more health-conscious and thus felt responsible for taking care of their own health for long-term well-being. The public is more aware to seek extra health measures with alternative therapies as awareness of sustainable lifestyles was promoted before the vaccine was introduced. Since then, a lot of producers have embraced this chance as a method to create more health products using natural ingredients. Such mechanisms of supply and demand in consumers' preferences on natural health products show when there's a high demand for the products by the consumers, the enterprises will deliver and produce more products or services to meet the needs of the consumers, in this matter, the natural health products (Liadis et al., 2019) The term of "natural" brings a positive image to the product since most consumers perceive natural as safe even though it does not necessarily mean safer or better. Historically, natural products have been used since ancient times for the treatment of many diseases and illnesses. But today, since these natural herbal products are easily accessible and known as over-the-counter products, people tend to get deceived by the natural term and perceive all natural health products are safe. The increase in the usage of NHPs in Malaysia is due to the accessibility and availability of the product in the market (Farida Islahudin et al., 2019). There are many reports on natural health products that are adulterated with harmful substances, and many still do not have data on their efficacy, hence it is pivotal that consumers know the safe-use elements of natural health products (Loo et al., 2020; Suriana Hanim Ariffin et al., 2021; Suzi Fadhilah Ismail et al., 2020). It is important for consumers to know and have the right knowledge regarding the safety of natural health products to prevent any adverse effects in the future. The objective of this study is to identify the safe-use elements perceived by consumers for natural health products. A qualitative approach of Focus-Group Discussion (FGD) is employed to elucidate the safe-use elements, and thematic analysis is being done on the qualitative data to explore the objective. For this article, we will be reviewing the safe use element of NHPs agreed upon by consumers. Toward the end of this research, the researchers are designing a model concept for the safe use of NHPs that could be a reference and guide to all stakeholders, especially consumers. The framework is expected to guide consumers in the safe use of NHPs. A complete guideline on the safe use of natural herbal products for consumers is pivotal to maintaining their general health and well-being aligned with sustainable development goal number 3, towards healthy lives and promoting well-being for all at all ages.

2. Literature Review

Estimated to be more than 130 million years old, as one of the oldest rainforests in the world, Malaysia is a country rich with biodiversity, especially in the tropics which could be a source of new drugs. Of approximately 15,000 species total of flowering plants, a total of 2,000 medicinal plants have been recognized for their therapeutic and medical values, and a large number of other plants have remained undiscovered for their benefits to humans' health (Fazleen Izzany Abu Bakar et al., 2018; Forestry Department Peninsular Malaysia, 2020; Ministry of Natural Resources and Environment, 2006). This statistic shows Malaysia has big potential in producing more quality natural health products and commercializing them locally and internationally as it can benefit the economy. In 2020, the market value for the herbal

industry in Malaysia was expected to achieve a target of RM32 billion with annual growth of eight to 15%, which should increase the income of the country (Bernama, 2019). This target was seen as possible as the Malaysian Government has acknowledged the potential development of the herbal industry as a promising industry in the country. Hence, the government introduced New Key Economic Areas (NKEA) EPP1 under the Economic Transformation Plan (ETP) (National Agricultural Policy 2011-2020), as one of Malaysia's economic transformation journeys in 2011. The main objective of EPP1 is to enhance the quality and efficacy of high-end herbal products through various scientific tests on the raw materials used in the production of herbal products (Farizah Ahmad et al., 2015; Mohd Hafizudin Zakaria, 2016; Rajendran & Nitty Hirawaty Kamarulzaman, 2023).

NHPs in Malaysia are regulated by National Pharmaceutical Regulatory Agency (NPR) that can be classified into four (4) categories which are i) traditional medicines, ii) finished herbal product, iii) herbal remedy, iv) homeopathic medicine, and v) natural products with therapeutic claim (National Pharmaceutical Regulatory Agency, 2023, p. 1). In this article, the term “NHPs” will be referred to the definition of finished herbal products from the Drug Registration Guidance Document (DRGD) Third Edition, Fourth Revision January 2023 by NPR. The definition of finished herbal product in the DRGD is defined as “products consist of herbal preparations made from one or more herbs. If more than one herb is used, the term “mixture herbal product” can also be used. Finished herbal products and mixture of herbal products may contain excipients in addition to the active ingredients. However, finished products or mixture herbal products to which chemically defined active substance have been added, including synthetic compounds and/ isolated constituents from herbal materials, are not considered to be herbal.” (National Pharmaceutical Regulatory Agency, 2023, p. 4). Generally, the definition of NHPs to consumers is any herbal products that are plant-based, and it is believed that they can prevent or treat diseases and able to maintain their general health (Farida Islahudin et al., 2019, p. 1832).

Based on the NPR's Annual Report 2022, there were 766 registration applications received for natural products and 670 NHPs registered in 2022 (National Pharmaceutical Regulatory Agency, 2023a, pp. 12, 13). This high number of NHPs registered in Malaysia's market shows the relevancy of alternative medicines and it is widely accepted by society here. In terms of safety for medication, it brings the meaning of no adverse effects or harmless for the consumer to consume any pharmaceuticals from the market. As for NHPs that are sold as over-the-counter products in every premise in Malaysia, the products' quality and safety can be supported with clinical trials or scientific evidence to support the claim of the products (Moreira et al., 2014, p. 249). NHPs are popular among consumers especially when they have a positive perception of herbal substances as the main ingredient of NHPs that are safer to be consumed and free from any adverse effects (Farida Islahudin et al., 2019. p. 1830). This common misconception is worrying as it could cause a serious adverse effect that could be affecting the quality of life for the consumer (Suzi Fadhilah Ismail et al., 2020. p. 192). Studies have found that most raw herbs that are used as the active ingredient in NHPs may contain toxic compounds resulting from microorganisms or environmental contaminations. Misidentification for part of plants or species, and adulterations may also lead to toxicity of

NHPs. Thus, this could affect the general health of consumers associated with the toxic effects which may be life-threatening side effects such as renal failure, liver damage, extreme fatigue, or even death (Ekor, 2014, p. 3; Nur Azra M. Pauzi et al., 2021, p. 2010). Another factor that can cause adverse effects from consuming NHPs is consumers are not obliged to get permission from professional practitioners to consume any NHPs in the market. They can purchase any NHPs from the claims on the packaging of the product following their intended use of NHPs (Yang, 2020, p. 1689). Although the herb used in any NHPs is scientifically proven can treat certain diseases depending on its claim, the finished products in the market are mostly untested and unregistered (Farida Islahudin et al., 2019, p. 1836).

Despite the fact that natural products have been used as medicines and treatments since ancient times, their safety, effectiveness, and quality are currently still being addressed, particularly in the context of finished herbal products that are being sold to consumers without any aid or prescription from healthcare professionals. From the National Centre for Adverse Drug Reactions Monitoring Annual Report 2020, the number of adverse drug reactions (ADRs) reported for NHPs was 173 (National Pharmaceutical Regulatory Agency, 2021, p. 11). This problem arises from the action of the consumers who mostly will not disclose the usage of NHPs to healthcare practitioners and are self-regulated by the consumer themselves (Ekor, 2014, p. 4; Nor Fadhlina Zakaria et al., 2021, p. 9). ADRs are always associated with herbal medicines as they can cause acute to serious adverse effects to consumers. It is generally a harmful and unpleasant reaction towards the body caused by any pharmaceutical product intake that usually needs proper administration from healthcare professionals to withdraw the ADRs from the body. This reaction can occur due to contraindications or herb-drug interactions that are usually not noticeable by consumers. ADRs contribute to the increase in admission to hospitals, morbidity, and mortality rate in most countries (Patton and Borshoff, 2018, p. 77; Zazzara et al., 2021, p. 464). In order to tackle this ADRs issue, many strategic and systematic approaches need to be done since the intake of this type of product cannot be controlled. Educational programs to spread awareness and increase the knowledge for safe use of NHPs to the public are crucial that need to be done especially by the government and healthcare professionals (Suriana Hanim Ariffin et al., 2021, p. 134).

Since herbal medicines have been utilized as an alternative and complementary medical therapy in Malaysia and gained much attention from Malaysia's MOH, the conservation and sustainable use of medicinal plants must be planned wisely to preserve them for future use. As for sustainable use, good agricultural and harvesting practices must also be implemented to prevent excessive harvesting of medicinal plants. Besides that, it is also necessary to implement sustainable harvesting of medicinal plants to ensure the continuous supply of these plant species. Furthermore, the quality of medicinal plants used as the raw materials of NHPs should be of high quality and free from microbial contamination and heavy metals (Chen et al., 2016, p. 6; Akinyemi et al., 2018, p. 195). In line with the Sustainable Development Goal (SDG) number 3 i.e., good health and well-being, this study aspires to balance the risks and therapeutic benefits of NHPs that are being used widely among consumers for the treatment of illnesses and for the maintenance of general well-being. As the primary source for NHPs,

medicinal plants need to be protected to reduce unnecessary harvesting of natural products from the environment and promote sustainable use of natural raw products.

3. Methodology

As exploratory research, the qualitative method approach was adopted to capture the complexity of various perspectives and views of participants for this study. The methodology involves two (2) phases which are structured to answer the Research Objectives. The phases are: 1) Identification of principle elements for safe use of NHPs, and 2) Distinguishing the common elements for the safe use of NHPs between consumers and current regulation in Malaysia.

Phase 1: Identification of principle elements for safe use of NHPs in Malaysia

To answer Research Objective 1, we have conducted content analysis, focus group discussions (FGD), and round table discussion (RTD) to identify the principal elements for safe use of NHPs by consumers. Content analyses were conducted on the relevant documents which include NHPs' registration guideline from the Ministry of Health Malaysia (MOH), DRGD Third Edition, Fourth Revision January 2023, Appendix 7, 33, & Product Advertisement Approval Guide, safe use framework from other countries, and international bodies to retrieve the elements that have been established elsewhere. The findings from the content analysis were analyzed and incorporated into the protocols for the FGD. A protocol was prepared to steer the FGD, but flexibility was allowed so that participants were able to explore the wider aspects of the topic they considered important. The participants for FGD (n = 8) were recruited using a purposeful sampling strategy that focuses on the need to obtain 'information-rich cases' from experienced individuals on the phenomenon of interest, which in this case, the consumers of NHPs in Malaysia (Palinkas et al., 2015, pp. 2, 3). During the FGD, participants involved are those who are willing to talk freely and openly about a particular subject (Cortini et al., 2019, p. 31). The saturation of the data was discussed among the researcher team during the focus group study analysis. Although saturation of the data will be determining the emerging themes from the thematic analysis process, the safe use elements mentioned even once by the consumer will also be included in the final guideline depending on the relevancy and suitability in Malaysian settings. The data from the FGDs was thoroughly examined to acquire the participants' views of the elements. All the FGD data was recorded, and thematic analysis will be carried out using qualitative analysis software, ATLAS.ti version 23.2.0., which involves methodically reading through the verbatim transcripts and segmenting and coding the text into categories that highlight what the participants have discussed (Thompson, 2022). They are then assessed, compared, and interpreted, also any similarities and differences will be noted. The categories will be combined and assigned to major themes that provide the information sought to derive the core elements. The FGD with the consumers was conducted in the Malaysian official language, Malay, and the audio will be transcribed in English language without changing the meaning of the script from consumers.

Phase 2: Distinguishing the common elements for safe use of NHPs between consumers and current regulations in Malaysia.

To answer Research Objective 2, all emerging themes and sub-themes from the FGD pertaining safe use of NHPs by consumers were structured by the research team in a series of discussions and workshops. The safe use elements of NHPs agreed upon by the consumers were compared with the current guidelines from NPRA to see the similarities or differences of the occurring elements. Similar sub-themes will be tabled to ease the process of discussion among the researchers. There were 3 documents from MOH Malaysia that were used as the main references to compare with safe use elements deduced by the consumers and current regulations in Malaysia. The documents include DRGD's third edition, appendix 7 and 33, and Product Advertisement Approval Guideline. Elements that emerged from the thematic analysis will be further strengthened with RTD with the regulators (n = 3). Different divisions of regulators were invited ie: NPRA and Selangor State Pharmaceutical Services Divisions to give their viewpoints on the elements that arose during the RTD session. The discussion was mainly to gain in-depth insights into the major themes that emerged and were being compared with current regulations in Malaysia from the focus group study analysis among the researchers. Each element for the safe use of NHPs was discussed and decided to be included in or excluded in the final consumer guideline according to the feasibility and suitability of the elements to Malaysian settings. The draft will be subjected to criticism from different perspectives to ensure the list of safe use elements of NHPs by consumers are able to be understood and subscribed to in a common space among common people and is not confined to an exclusively specific dimension such as medicine or pharmacology.

4. Results and Discussion

From the FGD, the consumers were expected to elucidate the safe use elements of NHPs. From Table 1, there are 11 safe use elements of NHPs deduced by them. The most frequently safe use element of NHPs mentioned over all age groups of participants was that natural health products must be in compliance with the guidelines from the Ministry of Health Malaysia (MOH). Other elements also were being mentioned and discussed ie: testimonials from other consumers and sellers, halal-certified products, perceptions on the efficacy of the products, popular products, and others. In Table 1 shows the list for safe use elements of NHPs agreed upon by the consumers.

Table 1. Safe use elements of NHPs agreed by consumers

11 Safe Use Elements of NHPs By Consumers

Testimonials

In compliance with the guidelines from the Ministry of Health Malaysia (MOH)

Halal certified

Perception on efficacy

Trusted over-the-counter outlets

Recommended products

Popular products

The use of “natural” terms

Established brand manufacturers

Published report on safety, efficacy, and quality

Sunnah diet ingredients

1) Testimonials

Testimonies mentioned by the participants were usually from other consumers, sellers or agents including online sellers, and family members. These wealth of information testimonies about the product give them confidence and feel safer consuming the NHPs. It will validate their perception of the products and proceed to make the purchase of that particular NHP. The testimonies obtained through various online selling platforms and social media based on the reviews from other satisfied consumers of the product, hence, managed to influence the participants to try the product. They were depending on the reviews from other consumers to make the purchasing decision.

“First is testimonials, when we look at a product, I like to read testimonials from other consumers. The more testimonies, the higher of chance that I will be purchasing that product, meaning I will feel more confident of the product. Because I like to read testimonials. If it’s positive feedback, then I will try it.” (C07)

“Then, testimonials from the specialists.” (C02)

“Yes (testimonials from other consumers). When I ask them to provide me with information about the product, they will contact me. They will ask me to read and query them about the product. I will tell them about my condition and ask if I can consume this product. They will provide testimonials from other consumers as well...” (C04)

“I will read testimonials. If I am looking for products, I did some research usually on Facebook and I will read the testimonials. Usually in the comment section, people will leave honest feedback. Then I will check if the feedback is negative, and I will direct message the user. If there are any negative side effects, I will ask them. They will tell us and from there I will decide if I want to proceed and purchase the product. If there were a lot of negative comments, I will not buy it. But usually, I will be asking other consumers about the product. Because I want to know their feedback” (C03)

“To me testimonials are important... I will cross-check from one online-selling platform

to another to read the reviews on their pages... Another way, I will ask my friends or other consumers if they have experience of consuming the product and will ask them if the product is okay or not” (C08)

Based on the uncertainty reduction theory by Berger and Calabrese, 1975, on online shopping context, shoppers will feel uncertain about the product or service offered through online selling platforms before they read the reviews from other shoppers convincing them the product or service is worth buying. Lack of information from the seller or previous consumers might affect the uncertainty of the shopper on the quality of the product or service (Lee & Ma, 2012, p. 112). From this study, more information and positive feedback about the product from previous consumers increases the participants' certainty to buy the NHP from online selling platforms or physical stores.

2) In compliance with the guidelines from the Ministry of Health Malaysia (MOH)

This safe use element is the most mentioned element by consumers. For this element, there are six other sub-elements discussed by consumers that match with the current regulation: NHPs registration guideline, DRGD Third Edition, Fourth Revision January 2023, Appendix 7, 33, & Product Advertisement Approval Guide, ie: registration number, hologram, dose, GMP, label & packaging, ingredients.

“Firstly, I will check if the product is registered” (C04)

“I think ingredients are one of the elements for a safe product. If the product fails to list the ingredients on the packaging, how does it get the approval for KKM?” (C04)

“It has a serial number (registration number) from KKM, so... and I will search the serial number on the website checker to see if it's registered or not, and it is registered” (C05)

“To me, I always check the hologram sticker” (C03)

“Processed from a hygienic place (GMP)” (C05)

“I want to add on, for me, packaging is also a concern to me to see whether the product is safe or not because for packaging, we know there are laws and regulations that need to be followed. They must have ingredients, manufacturing date, expiry date, origin, and brand. That is also my concern...” (C06)

“To me, usually the dose will be stated, and we need to follow it” (C07)

These sub-elements seen as detailed and added values for the safe use of NHPs by consumers incorporated with the guidelines from NPRA. NPRA is the regulatory body that regulates the registration and conducts post-marketing surveillance for a thorough evaluation of the drug safety of NHPs in the country. These guidelines are important to ensure the quality, safety, and efficacy of NHPs (National Pharmaceutical Regulatory Agency, Appendix 33, 2023, p. 6).

All registered products must display the registration number or MAL number on the packaging of the product followed by 8-digit numbers and ends with the code “T” to indicate the product is under the natural products category. Other than the registration number, a registered product

usually has a hologram logo as a security feature that can be easily observed by consumers or pharmacy enforcement officers (Jauze, 2018). Consumers also can check the validity of the registration number of the product on the official NPRA website, Quest3+ checker. As for the Meditag™ hologram security sticker, consumers can download an application on their phone, MediTag Checker, to scan the hologram on the packaging of the product to confirm the authenticity of the product before purchasing it (Munira Muhammad & Nor Izyani Hanafi, 2016). Other additional sub-elements such as dosage information, GMP logo, detailed label & packaging, and list of ingredients of the NHPs also were discussed by consumers during FGD to strengthen the point of safe use elements of NHPs that are in compliance with the current regulation in Malaysia.

3) Halal certified

Halal certified products are considered safe by consumers, especially to Muslim consumers. To confirm the NHP is halal certified, the halal logo is printed on the packaging of the finished product. The consumers agreed on the importance of halal status for NHPs to indicate the product is safe to consume.

“Yes, yes, usually it has a halal logo...” (C01)

“Other than halal...” (C2)

“... after that, I will check the halal symbol first” (C04)

“Then, when we look at the product box, there’s halal logo...” (C05)

Halal certification is not mandatory to the manufacturers to apply from Department of Islamic Development Malaysia (JAKIM). Halal pharmaceutical in Malaysia is described as following the Malaysian Standard MS 2424: 2012 Halal Pharmaceuticals-General Guidelines and Shariah compliance (Islamic law) from the ingredients prospect to the manufacturing process of the products. In terms of following Shariah law for ingredients, the pharmaceutical product must not contain any parts or products from animals that are non-halal and must be slaughtered according to the Shariah law. Additionally, halal pharmaceuticals must not contain any parts of humans or its derivatives. Other than that, the product must not contain any filths, safe for human consumption, and be non-poisonous. The types of equipment used for the preparation, processing, and manufacturing of any pharmaceutical products must be not contaminated with filths, and the process from the early stage until the end stage of producing a pharmaceutical product must be separated from the products that do not meet the requirements as stated before (Johari Ab Latiff & Zalina Zakaria, 2016).

Overall, consuming halal products is one of the Islamic teachings that are stated in the Quran and the hadith of the Prophet Muhammad SAW. All Muslims are obliged to follow Islamic law to consume sanctioned products as an act of worship to Allah SWT. However, halal concepts are not only applicable to Islamic religious practices but also can be a new dimension in understanding halal practices to Non-Muslim consumers in sustainability, product safety, and concern about animal welfare. In terms of maintaining general health and well-being, halal products are confirmed for their safety, cleanliness, and nutrition aspects (Golnaz Rezai et al.,

2012). Other than being particular about the halal requirements in the production of halal NHP, especially on the permissible source and equipment, a halal certified NHP assures the safety, quality, efficacy, and hygienic elements are emphasised. Thus, this can be beneficial to the well-being of Muslim and Non-Muslim consumers (Rahmatina Awaliah Kasri et al., 2023).

4) Perception on efficacy

Effectiveness is measured as a safety aspect of NHPs by consumers. The NHPs are considered as efficacious when the consumers felt positive changes from the intake of NHPs. Other than the efficacy towards their health, the consumers will find any NHPs from any herbal extracts that are proven of their functions and ability to perform in treating or preventing certain illnesses based on their concern.

“I feel the product is helpful... It gives positive effects to my body” (C07)

“One more thing, when I use the product, I feel more energetic, when our body feels lighter, our movement is faster, and my sleep is also good” (C04)

“I will search for the benefits of the plant. When I looked up for the plant, but I don't know its function, so when I read about their benefits and aligned with the description on the product, I feel it's safe to be consumed” (C05)

An effective NHP is viewed as safe for the participants. Other than that, the period of effectiveness of NHPs also was considered by them to see if they are fit to continue consuming the NHPs. They believed the faster the NHPs could treat their health as long as it will not harm them, the better it is. If it took time to see the result, they will immediately stop consuming the product and find another NHP with the same function in the market with quick effects.

5) Trusted over-the-counter outlets

There are many physical and online outlets selling NHPs as it is considered an over-the-counter product which allows the consumers to make the purchase without a prescription and aid from practitioners. The input on this safe use element by consumers is they prefer to buy the NHPs from trusted outlets such as the pharmacy or online selling platforms with a high number of purchases history of the NHPs.

“Secondly, when I'm buying a product, the place of the product sold will be my concern. If it is from a pharmacy, then it is one of the factors that give confidence to me” (C07)

“Usually if at the pharmacy, we will ask the pharmacist. For example, if we were looking for fish oil product, they will suggest the best product for us.” (C01)

“Yes (recommendation from a pharmacist). If we are looking for a vitamin, we must refer to them.” (C04)

Products sold in pharmacies will increase their confidence to consume since there are pharmacists as healthcare professionals to guide them in purchasing decisions on NHPs according to their health status. This may increase the awareness for the consumer to consult with healthcare professionals before deciding to consume any NHPs from the market. The

pharmacists could also monitor their health status from time to time to ensure there are no adverse effects caused by the NHPs. Other than ensuring the safety and quality of the NHPs, the health status of the consumers is also guaranteed.

6) Recommended products

One of the usual factors that influenced the participants to consume NHPs is the products recommended by other users which could be from other consumers, family members, or practitioners. Any recommended products especially by family members are perceived as safe to consume. Other than safe, the product is believed to be effective in treating symptoms of certain illnesses.

“Preferred by other consumers” (C07)

“If there is any of my family members have consumed the product and it’s not affecting their general health, then I will consume it too. I feel it is safe because I trust my family members.” (C08)

“I will choose based on the prescription by the doctor.” (C06)

There are many sources of recommendations for the participant in consuming NHPs from the market. Since there are so many products, they will ask around and trust other people’s recommendations on the NHPs before purchasing them.

7) Popular products

Popular products are considered as safe by the participant since there are many other consumers out there that know and have been using the same product.

“There are many other consumers for this product... Many said that the product is good... Testimonies from many consumers show that this particular product was more preferred than other product” (C07)

Comparison was made between few products before deciding to proceed with purchasing to ensure the chosen product is the best option that they could get from the market. They prefer products that are well-known and popular among other consumers.

8) The use of the “natural” term

The common use of NHPs among consumers is due to the perception of the use of the “natural” term that is emphasized on each packaging is beneficial to their health. Other than that, the consumers believe that if the NHPs contain natural herbals without any other derivatives are safe to consume and free from any side effects (Farida Islahudin et al., 2019).

“They use natural herbs, not mixtures” (C07)

“Because it’s a natural-based product since the ingredients are from fruits. It says after boiling it, the ingredients, these fruits can be consumed. That’s why I feel it’s safe to consume.” (C04)

Findings from the FGD show that consumers' beliefs on the benefits of natural sources could treat their health problems influencing them to consume NHPs. In addition, they feel the natural plants will not cause any serious side effects to them and if they feel negative effects on their body, they will immediately stop consuming the NHPs without feeling the need to consult practitioners, especially medical doctors.

9) Established brand manufacturers

Since there are many brand manufacturers in Malaysia, consumers prefer NHPs from brand manufacturers that they are familiar with. There are consumers that will do some research to check the background of the manufacturers before proceeding with buying their products. This is to ensure the manufacturers are valid in processing the NHPs to be sold in the market.

“And also, when I did my research of the company’s name and it stated that the company is located in Penang, and it’s a big factory, so I feel it’s fine to me to consume the product.” (C05)

“... Means that people know the product, when mentioned, we know, we know the producer.” (C07)

Brand manufacturers in Malaysia should not focus on marketing purposes only as they are responsible to produce safe, quality, and effective products for the consumers. It is important for the brand manufacturers to follow the guidelines by MOH to meet the specific standards of safety and quality NHPs and register their products with NPRA. There are many big brand manufacturers in Malaysia that took their own initiatives to conduct tests on their product to prove their product is safe and quality for the consumers.

10) Published report on safety, efficacy, and quality

Evidence-based safety studies of the NHPs are viewed as one of the safe use elements by the participant. Even though they only touched on this matter generally and not discussed it in depth, they are aware a safe, quality, and effective product must be tested beforehand to ensure it is safe to be consumed by consumers.

“So, I will feel more confident to consume since the product has undergone tests rather than just simply spreading words without any evidence” (C05)

A registered NHP at least is confirmed its safety and quality when the manufacturers must meet certain requirements such as being free from microbial contamination and heavy metals that could cause adverse effects to the consumers.

11) Sunnah diet ingredients

This element was deduced by Muslim consumers as the Sunnah diet is one of the many teachings of Prophet Muhammad (p.b.u.h) that brings benefits to humans’ general health and overall life.

“I also look up for sunnah diet” (C02)

“Since I have been consuming habattus sauda and olive, I feel confident that the product is safe since in the Al-Quran is stated it is a sunnah diet” (C01)

“It has raisins and other sunnah diet ingredients...” (C04)

There is much evidence on following the sunnah diet especially when it is stated in the Al-Quran that prohibited Muslims from consuming foods that could cause harm and affect their general health. Health is something that Islam has taught us to take care of and by consuming sunnah foods is one of the ways in maintaining good health. Consumption of the sunnah diet promotes the well-being to the consumers. It also could reduce the risk of getting chronic diseases such as cardiovascular diseases, hypertension, and diabetes (Mariam Abdul Latif & Suhaimi Ab. Rahman, 2020).

5. Conclusion

From this study, we found that there are 11 elements of safe use mentioned by consumers. Among the elements mentioned, only one element is aligned with the current regulations: NHPs must comply with the guidelines from the MOH. Under this element, there are six sub-elements coexist with the current regulations. They include of a registration number, hologram label, dosage information, GMP logo, complete label & packaging, and list of ingredients. These sub-elements for the safe use of NHPs are important for the consumers and are seen as added values for them to perceive a NHP is safe to consume. In this study, the safe use elements mentioned by consumers are mostly brought up more than once. But other elements that were mentioned once are also included in the safe use elements of NHPs. For future studies on this research topic, a quantitative study is suitable to be conducted to measure the relevancy of each safe use element emerged from this research findings.

Alongside the safe use elements of natural health products from the study, there are also additional on good practices that have been mentioned such as health status monitoring and must be well-informed before taking any natural health products. It is identified that these elements coincide with the guidelines disseminated by the regulators, but the depth of safety elements between these two stakeholders hold a very huge gap in achieving a sustainable ecosystem in the safe use of NHPs. It can be summarized that the safe use of NHPs is very crucial in ensuring healthy lives and promoting well-being for all ages also could prevent any worrisome consequences. This list of safe-use elements by consumers is pivotal in developing policies for the safe use of NHPs and ensuring effective initiatives are being taken to bring a healthy society and sustainable environment toward producing a safe, effective, and quality NHP in the future.

Acknowledgments

We would like to thank the Malaysian Ministry of Higher Education for the funding of this research under the Fundamental Research Grant Scheme (FRGS/1/2021/WAB13/UKM/03/1).

References

- Akinyemi, O., Jimoh, K. A., & Oyewole, S. O. (2018). Medicinal plants and sustainable human health: a review. *Horticulture International Journal*, 2(4), 194–195. <https://doi.org/10.15406/hij.2018.02.00051>
- Bernamea. (2019). *Malaysian herbal industry poised to hit RM32b market value in 2020*. Malay Mail. Retrieved from <https://www.malaymail.com/news/money/2019/10/28/malaysian-herbal-industry-poised-to-hit-rm32b-market-value-in-2020/1804543>
- Chen, S. L., Yu, H., Luo, H. M., Wu, Q., Li, C. F., & Steinmetz, A. (2016). Conservation and sustainable use of medicinal plants: Problems, progress, and prospects. *Chinese Medicine*, 11(1). BioMed Central Ltd. <https://doi.org/10.1186/s13020-016-0108-7>
- Cortini, M., Galanti, T., & Fantinelli, S. (2019). Focus group discussion: How many participants in a group? *Encyclopaideia*, 23(54). <https://doi.org/10.6092/issn.1825-8670/9603>
- Ekor, M. (2014). The growing use of herbal medicines: Issues relating to adverse reactions and challenges in monitoring safety. *Frontiers in Neurology*, 4 JAN. <https://doi.org/10.3389/fphar.2013.00177>
- Farida, I., Teng Azlan Shah, T. M., Malina, J., & Jamia, A. J. (2019). Preference, Perception And Predictors Of Herbal Medicine Use Among Malay Women In Malaysia. *Patient Preference and Adherence*, 13, 1829–1837. <https://doi.org/10.2147/PPA.S227780>
- Farizah, A., Mohd, A. S. Z., Noorasiah, S., & Fadzilah, A. A. M. (2015). Issues and Challenges in the Development of the Herbal Industry in Malaysia. *PROSIDING PERKEM*, 10, 227–238. Retrieved from <http://www.strategyr.com/MarketResearch/Infographics/Images/MCP-1081/1081.jpg>
- Fazleen, I. A. B., Mohd, F. A. B., Norazlin, A., Susi, E., & Asmah, R. (2018). A Review of Malaysian Medicinal Plants with Potential Anti-Inflammatory Activity. *Advances in Pharmacological Sciences*, 2018, 1–13. <https://doi.org/10.1155/2018/8603602>
- Forestry Department Peninsular Malaysia. (2020). *Annual Report 2020*. Retrieved from https://www.forestry.gov.my/images/Laporan_Tahunan/2020/LAPORANTAHUNANJPSM2020.pdf
- Golnaz, R., Zainalabidin, M., & Mad Nasir, S. (2012). Non-Muslim consumers' understanding of Halal principles in Malaysia. *Journal of Islamic Marketing*, 3(1). <https://doi.org/10.1108/17590831211206572>
- Jauze. (2018). *General Conditions For Registration Of Drug Products Under The Control Of Drugs And Cosmetics Regulations 1984*. National Pharmaceutical Regulatory Agency. Retrieved from <https://www.npra.gov.my/index.php/en/general-conditions-for-registration-of-drug-products-under-the-control-of-drugs-and-cosmetics-regulations-1984#label6.3>

Johari, A. L., & Zalina, Z. (2016). The Implementation of Malaysian Standard MS 2424:2012 Halal Pharmaceuticals-General Guidelines. *Journal of Shariah Law Research*, 1(1), 119–140. <https://doi.org/10.22452/JSLR.vol1no1.7>

Lee, H. H., & Ma, Y. J. (2012). Consumer perceptions of online consumer product and service reviews: Focusing on information processing confidence and susceptibility to peer influence. *Journal of Research in Interactive Marketing*, 6(2). <https://doi.org/10.1108/17505931211265426>

Liadis, C., Tsaloglidou, A., Koukourikos, K., & Kourkouta, L. (2019). Theories of Supply and Demand, Problems and Peculiarities in the Healthcare Sector: Its Effects on Health Policy. *J Health Commun*, 4(3). <https://doi.org/10.36648/2472-1654.4.3.155>

Loo, S. C., Chong, C. P., Ting, C. Y., Tan, M. H., & Luqman, N. S. (2020). Health supplement products use among patients with chronic illnesses: A multicenter study in rural areas of Sarawak, Malaysia. *Journal of Applied Pharmaceutical Science*, 10(11), 027–034. <https://doi.org/10.7324/JAPS.2020.10114>

Mariam, A. L., & Suhaimi, A. R. (2020). Knowledge and Attitude on Halal Food and Islamic Eating Practices among Students of Universiti Malaysia Sabah. *JOURNAL OF HALAL INDUSTRY & SERVICES*. <https://doi.org/10.36877/jhis.a0000166>

Ministry of Natural Resources and Environment. (2006). *Biodiversity in Malaysia. Conservation and Environmental Management Division (CEMD)*. Retrieved from <https://www.nrecc.gov.my/PustakaMedia/Penerbitan/Biodiversity%20in%20Malaysia.pdf>

Mohd, H. Z. (2016). *DEVELOPMENT OF HERBAL SELECTION CRITERIA MODEL FOR INVESTMENT AND COMMERCIALIZATION DECISION*. Universiti Putra Malaysia. Retrieved from <http://psasir.upm.edu.my/id/eprint/71463/>

Moreira, D. de L., Teixeira, S. S., Monteiro, M. H. D., De-Oliveira, A. C. A. X., & Paumgarten, F. J. R. (2014). Traditional use and safety of herbal medicines. *Revista Brasileira de Farmacognosia*, 24(2). <https://doi.org/10.1016/j.bjp.2014.03.006>

Munira Muhammad, & Nor Izyani Hanafi. (2016, October). Current Meditag™ Hologram Security Sticker: Registration of Pharmaceutical Products in Malaysia. MyHealth Ministry of Health Malaysia.

National Pharmaceutical Regulatory Agency. (2021). *2020 ANNUAL REPORT NATIONAL CENTRE FOR ADVERSE DRUG REACTIONS MONITORING*. Retrieved from <https://npra.gov.my/easyarticles/images/shared/FV/Annual%20Report/Annual-Report-2020.pdf>

National Pharmaceutical Regulatory Agency. (2023a). *Annual Report 2022*. Retrieved from <https://www.npra.gov.my/index.php/en/informationen/annual-reports/npra-annual-reports/publication/annual-report-2022/39/component.html>

National Pharmaceutical Regulatory Agency. (2023b). *Drug Registration Guidance Document (DRGD) (3rd ed., 4th Revision January 2023)*. Retrieved from

<https://www.npra.gov.my/easyarticles/images/users/1047/drgd/APPENDIX-7--Guideline-on-Registration-of-Natural-Products.pdf>

Nor Fadhlina, Z., Mohd, T. M. N., & Rafidah, A. (2021). Traditional and complementary medicine use among chronic haemodialysis patients: a nationwide cross-sectional study. *BMC Complementary Medicine and Therapies*, 21(1). <https://doi.org/10.1186/s12906-021-03268-4>

Nur Azra, M. P., Cheema, M. S., Amin Ismail, A. R. G., & Rozaini, A. (2021). Are Genotoxic and Carcinogenic Compounds Present in Malaysian Traditional Medicines and Herbal Supplements? A Review Based on the Malaysian Herbal Monograph. *Malaysian Journal of Medicine and Health Sciences*, 17. ISSN 2636-9346.

Palinkas, L. A., Horwitz, S. M., Green, C. A., Wisdom, J. P., Duan, N., & Hoagwood, K. (2015). Purposeful Sampling for Qualitative Data Collection and Analysis in Mixed Method Implementation Research. *Administration and Policy in Mental Health and Mental Health Services Research*, 42(5), 533–544. <https://doi.org/10.1007/s10488-013-0528-y>

Patton, K., & Borshoff, D. C. (2018). Adverse drug reactions. *Anaesthesia*, 73, 76–84. Blackwell Publishing Ltd. <https://doi.org/10.1111/anae.14143>

Rahmatina, A. K., Abdillah, A., Dono, W., & Sri Rahayu, H. H. (2023). Intention to consume halal pharmaceutical products: evidence from Indonesia. *Journal of Islamic Marketing*, 14(3). <https://doi.org/10.1108/JIMA-06-2021-0192>

Rajendran, S. D., & Nitty, H. K. (2023). Review of Issues and Challenges in the Growing Use of Herbal-Based Products. *Science Letters*, 17(1). <https://doi.org/10.24191/sl.v17i1.18516>

Suriana, H. A., Izyan, A. W., Yahaya, H., & Mohd, S. A. W. (2021). Adulterated traditional-herbal medicinal products and its safety signals in Malaysia. *Drug, Healthcare and Patient Safety*, 13. <https://doi.org/10.2147/DHPS.S305953>

Suzi, F. I., Ida Madieha, A. G. A., Mahyuddin, D., Juriah, A. J., & Sahida, S. (2020). REGULATORY CONTROL OF HERBAL AND TRADITIONAL MEDICINES IN MALAYSIA: ISSUES AND CONCERNS Kesan buruk. *International Journal of Business and Society*, 21(1). E-ISSN 1511-6670.

Thompson, J. (2022). A Guide to Abductive Thematic Analysis. *Qualitative Report*, 27(5). <https://doi.org/10.46743/2160-3715/2022.5340>

Yang, Y. (2020). Use of herbal drugs to treat COVID-19 should be with caution. *The Lancet*, 395(10238). [https://doi.org/10.1016/S0140-6736\(20\)31143-0](https://doi.org/10.1016/S0140-6736(20)31143-0)

Zazzara, M. B., Palmer, K., Vetrano, D. L., Carfi, A., & Graziano, O. (2021). Adverse drug reactions in older adults: a narrative review of the literature. *European Geriatric Medicine*, 12(3). <https://doi.org/10.1007/s41999-021-00481-9>

Copyrights

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/4.0/>).