

THE ROLE AND EXISTENCE OF HERBAL MEDICINE IN TRADITIONAL MEDICINE INDONESIA

Abstract

This study aims to systematically review the literature related to the application and impact of herbal medicine in traditional and contemporary medicine in Indonesia. The research method used was a literature study, where data was collected through a systematic search of articles, journals, and scientific publications related to the use of herbal medicine. The results of the literature review showed that jamu has significant potential as an alternative and complementary medicine, especially in the treatment of diverse health conditions such as diabetes, hypertension, and other chronic diseases. Studies highlighted the importance of the diverse chemical composition of herbs, including active compounds such as flavonoids, alkaloids and terpenoids, which contribute to their therapeutic effects. However, the study also underscores the importance of further research regarding standardization, effective dosing, and assessment of potential risks of jamu use to ensure safety and efficacy for users.

Keywords: Role, Existence of Jamu, Traditional Medicine, Indonesia.

Introduction

Indonesia, an archipelago rich in cultural diversity, is also known for its rich variety of herbs and their use in traditional medicine for centuries. One of the most famous cultural heritages is jamu, which is a system of herbal medicine that has been used since the days of the kingdoms in the archipelago. Jamu is not just an herbal drink, but an integral part of Indonesian life, symbolizing local wisdom in maintaining health.

The use of herbal medicine in Indonesia has a long and rich history, reflecting the local wisdom and traditions of the community in utilizing nature for health (Widowati et al., 2012). The history of herbal medicine can be traced back to the period of the Nusantara kingdoms, with the first written evidence of its use coming from inscriptions and ancient manuscripts, such as Serat Centhini written in the early 19th century, although the practice is believed to have started much earlier (Maryani et al., 2016). In old manuscripts and historical records, jamu is described as an heirloom of civilization, used for generations for a variety of purposes, ranging from disease treatment, daily health maintenance, to beauty and spiritual rituals (Widowati et al., 2014). The practice of using jamu indicates an extraordinary level of recognition and utilization of Indonesia's rich flora for health, as well as demonstrating the expertise of ancestors in selecting and processing natural ingredients (Kusuma et al., 2020).

However, the history of herbal medicine is also full of challenges, especially amidst the penetration of modern medicine and the global pharmaceutical industry. Issues of safety, standardization, and scientific validation are important topics in the discourse on the use of herbal medicine in the modern era (Sahumena et al., 2020).

Questions about the efficacy and consistent quality of herbal medicine are often raised, triggering a debate between traditional versus modern medicine. Along with globalization and scientific advances, the public began to demand strong scientific evidence regarding the safety and efficacy of herbal medicine (Kamar et al., 2021). This has forced researchers, practitioners, and the Indonesian government to take research, development, and regulation more seriously to support the recognition of herbal medicine as an important part of the health system, and to preserve it as a cultural heritage that not only has historical value, but also great economic and health potential for Indonesia (Harimurti et al., 2020).

From the time of the Nusantara kingdoms to the modern era, the development of herbal medicine has undergone various significant transformations, both in terms of production, composition, and how it is used. In the past, jamu was traditionally made by herbalists from natural ingredients gathered from the surrounding nature. Herbal recipes were passed down orally from generation to generation, making them an important part of cultural heritage (Aditama, 2014). In the royal era, herbalists even had an important role at court, responsible for the health of the king and his family. Along with the changing times, knowledge about jamu began to be documented in various manuscripts and inscriptions, expanding its spread in society (Purwaningsih, 2013).

The introduction of colonial influences and the development of modern science brought about major changes in the practice of traditional medicine, including jamu. The jamu industry began to emerge in the early 20th century, making jamu production no longer limited to a home scale but also a larger industrial scale (Satriyati, 2017). In the modern era, herbal medicine is not only consumed in its traditional form, but has also been adapted into various product forms, such as tablets, capsules, and powders, which are more practical for consumption. Government regulations and scientific research on herbal medicine are also increasingly intense to answer the challenges of safety, efficacy, and standardization (Ramadhan et al., 2022). Today, herbal medicine has become part of the health industry integrated with the modern medical system, proving its resilience and adaptability to the changing times, while bringing tremendous influence to the preservation and development of traditional medicine in Indonesia (Mustofa et al., 2022).

Finally, the existence of jamu as part of traditional medicine has persisted and even grown in popularity. Its distinctive uniqueness, which combines elements of culture, tradition, and science about the natural healing properties of various plants, makes herbal medicine have a special place in the hearts of its people (Supardi et al., 2011).

However, in reality, herbal medicine and other traditional medicines still face various challenges, including in terms of scientific recognition, standardization, safety, and efficacy. On the one hand, increased awareness of healthy lifestyles and a return to nature is driving increased demand for natural products, including herbal medicine

(Gitawati & Widowati, 2015). On the other hand, there are still doubts among some people regarding its efficacy and safety compared to modern pharmaceutical drugs (Pratama, 2022).

The question of how to integrate jamu with the modern health system, how to improve research and development, and how to utilize the potential of jamu for the health and welfare of the community, is very relevant (Agustina, 2006); (Mahawikan et al., 2022). Therefore, it is important to conduct an in-depth study of the role and existence of herbal medicine in traditional medicine in Indonesia, with the hope of providing useful information for the development of strategies for the preservation and integration of herbal medicine in the national health system.

This study is expected to provide a clear picture of the position of herbal medicine in the modern era, identify challenges and barriers, and propose appropriate solutions to ensure that herbal medicine can continue to be an important part of Indonesia's cultural heritage and treatment system, while ensuring its safety, effectiveness, and quality.

Research Method

The study in this research uses a literature review. The literature research method is a technique in research studies that focuses on collecting data from various published sources, such as books, scientific journal articles, conference proceedings, theses, and the like (Sio et al., 2024; Nguyen et al., 2024). In conducting the literature study method, the first step is to search for relevant keywords in catalogs, indexes, and search engines to identify materials that match the research topic (Kim et al., 2024; Nessel et al., 2024). After that, the data collection process involves reading and recording important information generated from various literatures related to the specific research objectives.

Result and Discussion

Definition of Herbs

Jamu is a traditional Indonesian medicine system rooted in the ancient Javanese cultural heritage, although similar practices are also found in other parts of Indonesia (Widowati et al., 2014). The word 'jamu' itself comes from the Old Javanese language meaning 'herbs' (Maryani et al., 2016). The definition of jamu refers to a combination of various natural ingredients, mainly plants, used to promote health, prevent, or treat disease. These herbal mixtures are usually consumed in the form of drinks or powders and have evolved over generations with recipes adapted through empirical experience and adjustments to local conditions (Kusuma et al., 2020). Jamu not only reflects Indonesia's rich biodiversity but also a holistic philosophy of health, involving physical and spiritual balance (Sahumena et al., 2020).

Jamu can be classified based on its intended use into several main types, including jamu for maintaining health and vitality, jamu for treating specific diseases, jamu for beauty, and jamu for reproductive health. Each of these categories includes a variety of recipes designed to meet different health needs (Kamar et al., 2021). In terms of form, traditional herbs are usually presented in liquid form, such as brewed herbs or drunk fresh, but in modern times, herbs have also adapted to other more practical forms, including tablets, capsules, powders, and even in the form of ready-to-brew tea (Harimurti et al., 2020). These developments not only make jamu easier to consume by various groups of people but also help preserve and popularize the use of jamu as part of a healthy lifestyle to the international arena (Aditama, 2014).

Furthermore, Indonesian traditional herbal medicine has undergone innovation and standardization to meet modern health standards and market requirements. This includes in-depth scientific research to validate the efficacy of herbal components used in jamu as well as the development of hygienic and sustainable production methods (Purwaningsih, 2013). In the era of globalization, jamu is not only limited to users in Indonesia, but has also attracted interest in the global market as a natural therapeutic alternative (Satriyati, 2017).

Thus, jamu is an Indonesian cultural heritage that has developed from generation to generation with efficacy recognized for generations. Today, jamu not only survives through its traditional values, but is also integrated with modern science to improve quality and competitiveness. By combining traditional health principles with contemporary production methods, jamu remains relevant and continues to play an important part of the complementary and alternative health system in Indonesia and around the world.

Traditional Medicine

Traditional medicine in Indonesia relies on a deep understanding of the balance between body, mind and environment, which is often closely linked to spiritual values and local customs (Kassaye et al., 2006). This concept reflects human interaction with nature and the belief that nature provides the necessary resources to heal and maintain health. Natural ingredients such as herbs, spices and roots are processed according to traditional recipes and are believed to have special properties to treat various health problems (Mukherjee, 2001). This holistic concept is supported by medicinal practices that focus not only on curing physical ailments but also on balancing energy in the body and restoring psychological and spiritual health, reflecting the view that optimal health is harmony between all aspects of life (Kayne, 2009). Traditional medicine, therefore, is not just about consuming jamu, but also involves massage therapy, meditation, rites, and sometimes energy healing, all of which are an integral part of local wisdom in various tribes and communities in Indonesia (Lu et al., 2021).

Traditional medicine and modern medicine have fundamental differences in treatment approaches, methodologies and philosophies. Traditional medicine focuses on the use of natural materials, such as herbs and spices, and often considers harmony between the physical, mental and spiritual in the healing process, viewing the body as a unity that needs to be kept in balance (Arnold & Gulumian, 1984). This approach is usually holistic, with an emphasis on prevention and treatment that adapts to individual conditions. In contrast, modern medicine, often associated with western medicine, is based on science and technology, using synthetic drugs, medical procedures, and sophisticated equipment in diagnosis and therapy (Sofowora, 1996). Modern medicine tends to be specific and segmented in dealing with illness, with a primary focus on treating physical illnesses and their symptoms, often through direct intervention at the source of the problem (Payyappallimana, 2010). A clear difference between the two systems is also seen in the way treatment efficacy is validated, where modern medicine requires rigorous clinical trials, whereas traditional medicine relies more on hereditary knowledge and empirical experience (Waldram, 2000).

Thus, traditional medicine and modern medicine are two different but complementary systems in promoting health and healing. Traditional medicine is based on hereditary knowledge and utilization of natural materials with a holistic approach, while modern medicine relies on scientific evidence, advanced technology, and disease-specific interventions. While the methods and principles between the two can vary, both play an important role in offering therapeutic options for people, with traditional medicine often considered as a companion or alternative to modern medicine, especially in the context of complementary and integrative medicine.

Discussion on Herbal Ingredients

Herbal ingredients used in making jamu include a variety of plants known to have medicinal properties, such as temulawak (*Curcuma xanthorrhiza*) to improve liver function, turmeric (*Curcuma longa*) which functions as an anti-inflammatory and boosts the immune system, ginger (*Zingiber officinale*) which is effective in relieving colds and indigestion, and lemongrass (*Cymbopogon citratus*) which is often used for relaxation and calming the mind (Organization, 2013). Others include cinnamon (*Cinnamomum verum*) which helps control blood sugar levels, galangal (*Alpinia galanga*) which has anti-inflammatory properties, and cat's whisker leaves (*Orthosiphon stamineus*) which are known to be good for kidney health. These ingredients are usually processed traditionally through boiling or shredded into powder, then mixed according to hereditary recipes to create jamu with specific functions according to their medicinal needs (Houghton, 1995).

The processing and preparation of herbal ingredients in traditional herbal medicine involves several important steps to ensure the maximum efficacy of the ingredients (Yuan et al., 2016). Typically, fresh herbal ingredients are first cleaned to

remove impurities and residues. According to the herbal recipe, the ingredients are then chopped, ground, or pulverized using traditional tools such as stone cobblers or modern blenders to achieve effective extraction (Che et al., 2017). Boiling is often used to extract active compounds from herbal ingredients, where the water used and the duration of boiling are regulated to ensure a rich extract. Alternatively, fermentation or filtration is also used in some herbs to improve the bioavailability and absorption of active ingredients (Vecchiato, 2019). After the extraction process is complete, the herbs are filtered to separate the pulp from the liquid, which can then be directly consumed or further processed, such as thickening or drying into powder form. Cleanliness and thoroughness in each stage of processing are very important to maintain the quality and effectiveness of the herbal medicine produced (Sindiga et al., 1995).

In conclusion, the processing and preparation methods of herbal ingredients in herbal medicine include a series of meticulous and hygienic processes, from cleaning, cutting, grinding to boiling or fermentation, all aimed at optimizing the extraction of the properties of the natural ingredients. This process is crucial to ensure that the herbs are not only effective in providing the desired health benefits, but also safe for consumption. Through traditional methods that have been passed down through generations or the use of modern techniques, this meticulous processing helps in maintaining the integrity and potency of the herbal ingredients in jamu, a reflection of local wisdom in utilizing nature's bounty for health.

Efficacy and Benefits of Herbs

The effectiveness of jamu as medicine has been recognized throughout history in various communities, especially in Indonesia, thanks to its blend of natural herbal ingredients rich in bioactive compounds (Gitawati & Widowati, 2015). Over time, scientific research has begun to uncover the mechanisms by which these ingredients work in the body, showing potential as anti-inflammatory, antioxidant, analgesic and antimicrobial, among others. However, the specific effectiveness of herbal medicine depends on many factors, including the quality of the raw materials, the precision in processing, and the dosage used. While many users report direct benefits of jamu consumption in the management of various health conditions, further clinical studies are needed to broadly support such claims (Maryani et al., 2016). Therefore, the use of jamu as complementary medicine in modern medicine is gaining attention as an important area of research, promising the integration of traditional wisdom and modern science for holistic health management.

The diversity of benefits offered by jamu is tailored to the composition of herbal ingredients used in the recipe, resulting in various types of jamu with specific health focuses (Kusuma et al., 2020). Herbs based on turmeric and ginger can help improve digestive health and protect the liver, while herbs containing ginger are known for their effectiveness in relieving colds and stimulating blood circulation (Sahumena et al.,

2020). Herbs infused with moringa or gotu kola are often used to help strengthen the immune system and aid cognitive function, while herbs with cardamom or cinnamon may be targeted to alleviate digestive problems or control blood sugar levels (Kamar et al., 2021). There are also specialty herbs for women, blended from herbs such as turmeric and manjakani, designed to address feminine issues and improve reproductive health (Harimurti et al., 2020). The variety of benefits makes jamu not only a healing medicine but also a health supplement to prevent various diseases, all of which reflect the holistic philosophy of traditional medicine in maintaining the balance and harmony of the body (Aditama, 2014).

The conclusion that can be drawn from the discussion of jamu is that jamu is not just a traditional herbal drink, but is part of a holistic treatment system that has a diversity of health benefits thanks to the combination of natural ingredients. Each type of jamu is formulated with specific recipes to target specific health conditions, encapsulating the traditional wisdom of utilizing nature's bounty for physical and mental well-being. Jamu offers potential as complementary medicine in support of modern medicine, with further studies conducted to validate its effectiveness and mechanism of action. This affirms jamu's position as a valuable cultural heritage, while encouraging the integration of tradition and modern science in the pursuit of holistic health improvement.

Herbs and Health Practices

In the traditional health care system, jamu plays a significant role as an alternative treatment method that relies on hereditary knowledge and utilization of natural resources (Purwaningsih, 2013). As an integral part of health practices in Indonesia and several other countries, jamu is not only considered as a medicine to treat various diseases, but also as a way to maintain health and prevent disease (Satriyati, 2017). Traditional health workers such as shamans, healers, or herbalists often make herbal medicine the first choice in their therapy, based on the philosophy of body balance and harmony (Ramadhan et al., 2022). The acceptance and integration of herbal medicine in the healthcare system reflects recognition of the value and effectiveness of herbal therapies, while encouraging the development of more evidence-based practices, education on safe use, and standardization in production and distribution to maintain the quality and safety of herbal medicine (Mustofa et al., 2022).

The integration of herbal medicine with modern medicine is a progressive step that combines the richness of traditional medicine with scientific accuracy. In some regions, such as Indonesia, this integration effort has begun with the standardization of herbal medicine production in accordance with Good Manufacturing Practice (GMP) principles and research to prove the efficacy and safety of herbal components against various health conditions (Supardi et al., 2011). The modern health system has gradually recognized the potential of herbal medicine as a complementary and alternative

approach, where herbal medicine is not only used as an adjuvant to improve the results of conventional treatment but also as the main therapeutic option in certain cases (Gitawati & Widowati, 2015). This creates a synergy between the two systems, where ethnobotanical knowledge and traditional practices are valued along with the application of scientific approaches supported by growing clinical evidence, making treatment more holistic and individualized in improving the quality of patients' health.

The Existence of Herbal Medicine in the Modern Era

Public Acceptance

Public acceptance of jamu is still strong, especially in countries with a cultural heritage of herbal medicine such as Indonesia, where jamu is not only valued as part of cultural identity but also trusted for daily health (Pratama, 2022). Despite the increasing trend towards modern medicine, many individuals continue to choose jamu for economic reasons, local availability, and belief in its natural benefits and fewer side effects (Agustina, 2006). This is reinforced by the growing awareness of healthy lifestyles and a return to nature, which has encouraged younger generations to be more accepting and even promote jamu as a healthy option. This trust continues to grow in line with improvements in the quality and standardization of herbal medicine as well as the publication of scientific research that confirms its effectiveness, so that the acceptance of herbal medicine in society reaches a balance between local wisdom and scientific validation (Mahawikan et al., 2022).

The popularity of herbal medicine is not limited to rural communities but is also widespread in urban areas, where lifestyle shifts and health awareness have driven increased interest in this herbal medicine (Fatmawati & Wijaya, 2021). In big cities, jamu has undergone a transformation in both presentation and presentation, with availability in modern and convenient packaging appealing to young consumers and busy professionals. Nonetheless, in rural areas, jamu is still deeply rooted in tradition and often prepared in traditional ways directly from fresh ingredients (Zulkarnain et al., 2019). This positive trend shows how jamu has managed to bridge the gap between traditional and modern, maintaining its relevance in a diverse society. Online availability and promotion through social media has further expanded the reach of jamu, affirming its position as a dynamic and adaptive piece of cultural heritage that has managed to survive and thrive in the globalization era (Andriati & Wahjudi, 2016).

Social media and effective marketing strategies have played an important role in maintaining and enhancing the presence of jamu in the digital era (Abdullahi, 2011). Through social media platforms, jamu producers and enthusiasts can share information on health benefits, recipes, and proper usage, while creating awareness and building a wide community of users. Digital marketing also allows herbal medicine to reach a younger and urbanized audience, who may have previously had less exposure to herbal medicine traditions (Zhang, 2004). With engaging and educational content, jamu is

successfully positioned as a trendy and relevant natural health solution. Marketing campaigns that utilize influencers and public figures to endorse modern herbal products have increased their popularity among more brand- and lifestyle-conscious consumers (Igoli et al., 2005). Thus, social media and marketing have not only helped in maintaining the existence of herbal medicine but also in redefining people's perception of herbal medicine, making it more appealing and accessible to different walks of life.

Conclusion

Recent research findings indicate that jamu plays a crucial role in both traditional and modern medicine schemes, thanks to its efficacy and potency supported by scientific evidence. This review highlights how jamu has not only maintained its existence as an important element of cultural heritage in its countries of origin, such as Indonesia, but also how it has gained global recognition as a safe and natural therapeutic alternative. The findings show a positive shift in public perception, from a mere home remedy to a health product backed by scientific research. Research into the chemical composition, therapeutic potential and mechanism of action of jamu strengthens its position in integrative medicine. This, together with the strategic use of social media and marketing, has contributed to the increasing popularity of jamu not only among traditional but also urbanized communities, demonstrating its adaptability and resilience in the face of social change and technological advancement.

The future of jamu in medicine in Indonesia seems very promising, in line with the increasing global awareness of holistic health and natural medicine. With more research supporting the health benefits of jamu and recognition from the medical community, jamu is expected to be increasingly integrated into the formal health system. We may see closer collaboration between traditional and modern medicine practitioners, where standardized and scientifically researched jamu recipes become a companion or alternative to conventional medicine. Clear regulations and consistent standardization are needed to ensure the quality and safety of herbal medicine, which will increase public trust and facilitate its integration into official medicine. With its rich culture and biodiversity, Indonesia has great potential to become a global leader in the development and promotion of traditional medicine, especially herbal medicine, which brings benefits to the health of mankind in a broad and sustainable manner.

References

- Abdullahi, A. (2011). Trends and challenges of traditional medicine in Africa. ... of *Traditional, Complementary and Alternative Medicines*, Query date: 2024-05-10 07:18:00. <https://www.ajol.info/index.php/ajtcam/article/view/67959>
- Aditama, T. (2014). Jamu dan kesehatan. Query date: 2024-05-10 07:04:19. <https://repository.badankebijakan.kemkes.go.id/4296/1/E-BOOK%20%28JAMU%26KESEHATAN%29.pdf>

- Agustina, L. (2006). Penggunaan ramuan herbal sebagai feed additive untuk meningkatkan performansi broiler. *Prosiding Lokakarya Nasional Inovasi Teknologi Dalam ...*, Query date: 2024-05-10 07:04:19. <https://www.academia.edu/download/51937496/9.pdf>
- Andriati, A., & Wahjudi, R. (2016). Tingkat penerimaan penggunaan jamu sebagai alternatif penggunaan obat modern pada masyarakat ekonomi rendah-menengah dan atas. *Masyarakat, Kebudayaan Dan Politik*, Query date: 2024-05-10 07:04:19. <https://www.neliti.com/publications/150017/tingkat-penerimaan-penggunaan-jamu-sebagai-alternatif-penggunaan-obat-modern-pad>
- Arnold, H., & Gulumian, M. (1984). Pharmacopoeia of traditional medicine in Venda. *Journal of Ethnopharmacology*, Query date: 2024-05-10 07:18:00. <https://www.sciencedirect.com/science/article/pii/0378874184900862>
- Che, C., George, V., Ijinu, T., Pushpangadan, P., & ... (2017). Traditional medicine. *Pharmacognosy*, Query date: 2024-05-10 07:18:00. <https://www.sciencedirect.com/science/article/pii/B9780128021040000020>
- Fatmawati, I., & Wijaya, N. (2021). Strategi Pengembangan Jamu Ramuan Madura Di Kabupaten Sumenep. *Jurnal Pertanian Cemara*, Query date: 2024-05-10 07:04:19. <https://ejournalwiraraja.com/index.php/FP/article/view/1365>
- Gitawati, R., & Widowati, L. (2015). Penggunaan jamu pada pasien hiperlipidemia berdasarkan data rekam medik, di beberapa fasilitas pelayanan kesehatan di Indonesia. *Jurnal Kefarmasian Indonesia*, Query date: 2024-05-10 07:04:19. <http://www.jkefarind.com/index.php/jki/article/view/3474>
- Harimurti, S., Ulandari, S., Widada, H., & Damarwati, V. (2020). Identifikasi Paracetamol dan Asam Mefenamat pada Jamu Pegel Linu dan Asam Urat yang Beredar di Daerah Istimewa Yogyakarta. *J Pharm Sci*, Query date: 2024-05-10 07:04:19. <https://scholar.archive.org/work/4vxgz6bctbclbd7egkthul37ki/access/wayback/> <https://jurnal.uns.ac.id/jpscr/article/download/41929/pdf>
- Houghton, P. (1995). The role of plants in traditional medicine and current therapy. ... *Journal of Alternative and Complementary Medicine*, Query date: 2024-05-10 07:18:00. <https://doi.org/10.1089/acm.1995.1.131>
- Igoli, J., Ogaji, O., Tor-Ayiin, T., & ... (2005). Traditional medicine practice amongst the Igbo people of Nigeria. Part II. ... *Journal of Traditional ...*, Query date: 2024-05-10 07:18:00. <http://journals.athmsi.org/index.php/ajtcam/article/view/47>
- Kamar, I., Zahara, F., & Yuniharni, D. (2021). Identifikasi paracetamol dalam jamu pegal linu menggunakan metode kromatografi lapis tipis (KLT). *QUIMICA: Jurnal Kimia Sains Dan ...*, Query date: 2024-05-10 07:04:19. <https://ejurnalunsam.id/index.php/JQ/article/view/3973>
- Kassaye, K., Amberbir, A., Getachew, B., & ... (2006). A historical overview of traditional medicine practices and policy in Ethiopia. *Ethiopian Journal of ...*, Query date: 2024-05-10 07:18:00. <https://www.ajol.info/index.php/ejhd/article/view/10023>
- Kayne, S. (2009). Introduction to traditional medicine. *Complementary and Alternative Medicine*, 2nd ..., Query date: 2024-05-10 07:18:00. <http://ndl.ethernet.edu.et/bitstream/123456789/57044/1/39.pdf.pdf#page=16>
- Kim, K., Lee, K., & Kwon, O. (2024). A systematic literature review of the empirical studies on STEAM education in Korea: 2011–2019. *Disciplinary and Interdisciplinary*

- Education in ... , Query date: 2024-05-10 07:14:07. https://doi.org/10.1007/978-3-031-52924-5_6*
- Kusuma, T., Wulandari, E., Widiyanto, T., & ... (2020). Hubungan tingkat pengetahuan dan sikap terhadap kebiasaan konsumsi jamu pada masyarakat Magelang tahun 2019. *Pharmacon: Jurnal ... , Query date: 2024-05-10 07:04:19. <https://journals.ums.ac.id/index.php/pharmacon/article/view/10857>*
- Lu, W., Yao, J., Zhu, X., & Qi, Y. (2021). Nanomedicines: Redefining traditional medicine. *Biomedicine & Pharmacotherapy, Query date: 2024-05-10 07:18:00. <https://www.sciencedirect.com/science/article/pii/S0753332220312968>*
- Mahawikan, S., Abdul, A., & ... (2022). Persepsi Masyarakat terhadap Efektivitas Penggunaan Jamu dalam Meningkatkan Imunitas selama Pandemi Covid-19. *Jurnal ... , Query date: 2024-05-10 07:04:19. <http://journal2.stikeskendal.ac.id/index.php/far/article/view/143>*
- Maryani, H., Kristiana, L., & Lestari, W. (2016). Faktor dalam pengambilan keputusan pembelian jamu saintifik. *Buletin Penelitian Sistem ... , Query date: 2024-05-10 07:04:19. https://www.researchgate.net/profile/Herti-Maryani-2/publication/317677804_FAKTOR_DALAM_PENGAMBILAN_KEPUTUSAN PEMBELIAN_JAMU_SAINTIFIK/links/5ef039a7299bf1faac6c95cb/FAKTOR-DALAM-PENGAMBILAN-KEPUTUSAN-PEMBELIAN-JAMU-SAINTIFIK.pdf*
- Mukherjee, P. (2001). Evaluation of Indian traditional medicine. *Drug Information Journal, Query date: 2024-05-10 07:18:00. <https://doi.org/10.1177/009286150103500235>*
- Mustofa, F., Baiquni, F., Triyono, A., & ... (2022). Pengetahuan, Sikap dan Praktik Masyarakat Dalam Penggunaan Jamu Untuk Meningkatkan Daya Tahan Tubuh Selama Pandemi Covid-19 Di Indonesia. *Jurnal ... , Query date: 2024-05-10 07:04:19. <http://ejournal2.litbang.kemkes.go.id/index.php/toi/article/download/6034/2717>*
- Nesset, V., Vanderschantz, N., & ... (2024). Advocating for a more active role for the user in LIS participatory research: A scoping literature review. *Journal of ... , Query date: 2024-05-10 07:14:07. <https://doi.org/10.1108/JD-11-2022-0254>*
- Nguyen, D., Boeren, E., Maitra, S., & ... (2024). A review of the empirical research literature on PLCs for teachers in the Global South: Evidence, implications, and directions. *... Development in Education, Query date: 2024-05-10 07:14:07. <https://doi.org/10.1080/19415257.2023.2238728>*
- Organization, W. H. (2013). WHO traditional medicine strategy: 2014-2023. *apps.who.int. <https://apps.who.int/iris/bitstream/handle/10665/92455/9786167697581-tha.pdf>*
- Payyappallimana, U. (2010). Role of traditional medicine in primary health care: An overview of perspectives and challenging. *横浜国際社会科学研究= Yokohama Journal ... , Query date: 2024-05-10 07:18:00. <https://ynu.repo.nii.ac.jp/record/3027/files/Payyappallimana.pdf>*
- Pratama, K. (2022). Penggunaan jamu sinom sebagai bahan pembuatan es krim: Used of jamu sinom as an ingredients in ice cream making. *Jurnal Ilmiah Pariwisata Dan Bisnis, Query date: 2024-05-10 07:04:19. <https://www.jipb.stpbipress.id/index.php/paris/article/download/213/190>*
- Purwaningsih, E. (2013). Jamu, obat tradisional asli Indonesia: Pasang surut pemanfaatannya di Indonesia. *EJurnal Kedokteran Indonesia, Query date: 2024-*

- 05-10 07:04:19. <https://janaaha.com/wp-content/uploads/2018/01/Jamu-Obat-Tradisional-Asli-Indonesia-Pasang-Surut-Pemanfaatannya-di-Indonesia.pdf>
- Ramadhan, D., Nahdliyyati, D., & ... (2022). Pengetahuan Masyarakat terhadap Penggunaan Jamu untuk Meningkatkan Imunitas Penderita COVID-19 yang Pernah Menjalani Isolasi Mandiri. *Jurnal Farmasi* ..., Query date: 2024-05-10 07:04:19. <https://e-journal.unair.ac.id/JFK/article/download/32937/23410>
- Sahumena, M., Ruslin, R., Asriyanti, A., & ... (2020). Identifikasi jamu yang beredar di kota kendari menggunakan metode spektrofotometri Uv-Vis. *Journal Syifa Sciences* ..., Query date: 2024-05-10 07:04:19. <https://ejurnal.ung.ac.id/index.php/jsscr/article/view/6977>
- Satriyati, E. (2017). Menjaga tradisi minum jamu Madura dengan penyampaian pesan interpersonal kesehatan antara peramu dan pengguna. *DIMENSI-Journal of Sociology*, Query date: 2024-05-10 07:04:19. <https://eco-entrepreneur.trunojoyo.ac.id/dimensi/article/view/3757>
- Sindiga, I., Nyaigotti-Chacha, C., & Kanunah, M. (1995). *Traditional medicine in Africa*. Query date: 2024-05-10 07:18:00.
- Sio, K., Fraser, B., & Fredline, L. (2024). A contemporary systematic literature review of gastronomy tourism and destination image. *Tourism Recreation Research*, Query date: 2024-05-10 07:14:07. <https://doi.org/10.1080/02508281.2021.1997491>
- Sofowora, A. (1996). Research on medicinal plants and traditional medicine in Africa. ... *Journal of Alternative and Complementary Medicine*, Query date: 2024-05-10 07:18:00. <https://doi.org/10.1089/acm.1996.2.365>
- Supardi, S., Herman, M., & Yuniar, Y. (2011). Penggunaan jamu buatan sendiri di Indonesia (analisis data riset kesehatan dasar tahun 2010). *Buletin Penelitian Sistem* ..., Query date: 2024-05-10 07:04:19. https://www.researchgate.net/profile/Max-Herman-4/publication/295072741_PENGGUNAAN_JAMU_BUATAN_SENDIRI_DI_INDONESIA_ANALISIS_DATA_RISET_KESEHATAN_DASAR_TAHUN_2010/links/5a8a76250f7e9b1a95545416/PENGGUNAAN-JAMU-BUATAN-SENDIRI-DI-INDONESIA-ANALISIS-DATA-RISET-KESEHATAN-DASAR-TAHUN-2010.pdf
- Vecchiato, N. (2019). Traditional medicine. *The Ecology of Health and Disease in Ethiopia*, Query date: 2024-05-10 07:18:00. <https://doi.org/10.4324/9780429310232-10>
- Waldram, J. (2000). The efficacy of traditional medicine: Current theoretical and methodological issues. *Medical Anthropology Quarterly*, Query date: 2024-05-10 07:18:00. <https://doi.org/10.1525/maq.2000.14.4.603>
- Widowati, L., Astuti, Y., Siswoyo, H., Gitawati, R., & ... (2012). Gambaran praktik penggunaan jamu oleh dokter di enam provinsi di Indonesia. *Buletin Penelitian* ..., Query date: 2024-05-10 07:04:19. <https://scholar.ui.ac.id/en/publications/gambaran-praktik-penggunaan-jamu-oleh-dokter-di-enam-provinsi-di->
- Widowati, L., Siswanto, S., & ... (2014). Evaluasi praktik dokter yang meresepkan Jamu untuk pasien penderita penyakit degenerative di 12 propinsi. *Media* ..., Query date: 2024-05-10 07:04:19. <http://download.garuda.kemdikbud.go.id/article.php?article=260191&val=4883&title=EVALUASI%20PRAKTIK%20DOKTER%20YANG%20MERESEPKAN%20JAMU%20>

- 2oUNTUK%20PASIEN%20PENDERITA%20PENYAKIT%20DEGENERATIVE%20DI%201
2%20PROPINSI
- Yuan, H., Ma, Q., Ye, L., & Piao, G. (2016). The traditional medicine and modern medicine from natural products. *Molecules*, Query date: 2024-05-10 07:18:00. <https://www.mdpi.com/1420-3049/21/5/559>
- Zhang, X. (2004). Traditional medicine: Its importance and protection. *Protecting and Promoting Traditional Knowledge ...*, Query date: 2024-05-10 07:18:00. https://www.researchgate.net/profile/Promila-Kapoor-Vijay/publication/321587774_Protecting_and_promoting_Traditional_Knowledge/data/5a280cffa6fdcc8e8671a136/Protecting-and-promoting-Traditional-Knowledge.pdf#page=23
- Zulkarnain, Z., Wijayanti, E., & ... (2019). Studi Literatur untuk Memperoleh Dasar Ilmiah Penggunaan Akar Alang-alang sebagai Ramuan Jamu untuk Penyembuhan Beberapa Penyakit di Rumah Riset Jamu *Media ...*, Query date: 2024-05-10 07:04:19. <https://repository.badankebijakan.kemkes.go.id/id/eprint/5033/>