

Diagnostic and Therapeutic Alternative Medicine in Healthcare Practice: A Comprehensive Review

Adhi Dharma Wibawa¹, Randi Achiar Risaldi¹, Faiz Arrafi Kartowirejo¹, Siti Dwi Suryani², Valentino Kendenan¹,
Naufal Ahmad¹, Cintya Melati Sianipar¹, Nazwa Zuhrotul Laili¹

¹Department of Medical Technology, Faculty of Medicine and Health, Institut Teknologi Sepuluh Nopember, Surabaya, Jl. Teknik Kimia, Keputih, Kec. Sukolilo, Surabaya, Jawa Timur, 60111, Indonesia

²Department of Electrical Engineering, Faculty of Intelligent Electrical and Informatics Technology, Institut Teknologi Sepuluh Nopember, Surabaya, Jl. Teknik Kimia, Keputih, Kec. Sukolilo, Surabaya, Jawa Timur, 60111, Indonesia

Corresponding Author: suryanisitidwi@gmail.com

Abstract — Treatment that combines local wisdom and modern knowledge is increasingly developing. This treatment is known as alternative medicine, which differs from conventional medicine because it is intended for therapy or diagnosis and has a close relationship with cultural practices such as community spirituality. This review aims to comprehensively understand alternative medicine, including its background, reasons for its use and debates about its effectiveness and safety. In addition, this review aims to improve readers' understanding of alternative medicine so that they can make better decisions in choosing the right treatment. This review compares two types of alternative medicine, diagnostic and therapeutic medicine. Diagnostic alternative medicine focuses on identifying imbalances in the body that are believed to cause disease. In contrast, therapeutic alternative medicine is based on traditional beliefs, is empirical, or has been used for centuries. The debate about the credibility of these two alternative medicine methods is ongoing, and strong scientific evidence is needed to support their effectiveness and safety. In addition, it is important to discuss the regulation and standardization of practice for practitioners of these alternative medicines. This review emphasizes the importance of consulting a specialist before starting any alternative treatment to ensure its safety and suitability for the patient's health condition. This review helps to increase readers' understanding of alternative medicine, so they can make better decisions in choosing the right treatment.

Keywords — Alternative Medicine; Diagnostic Alternative Medicine; Therapeutic Alternative Medicine

How to cite: Wibawa AD, Risaldi RA, Kartowirejo FA, Suryani SD, Kendenan V, Ahmad N, Sianipar CM, Laili NZ. Diagnostic and Therapeutic Alternative Medicine in Healthcare Practice: A Comprehensive Review. Journal of Medicine and Health Technology. 2025;2(1):36-45. doi: 10.12962/j30466865.v2i1.2338

*Manuscript received 30 October 2024; revised 17 November 2024; accepted 13 December 2024. Date of publication 2 May 2025.
JMHT is licensed under a Creative Commons Attribution-Share Alike 4.0 International License.*



INTRODUCTION

Alternative medicine is different from conventional medical practices. In general, the methods used are holistic in nature to achieve overall wellness with attention to mental, emotional, and spiritual balance. Despite the advancements in medical technology, some individuals remain dissatisfied with modern medicine due to its side effects or limitations in managing chronic illnesses, perceiving it as a less holistic approach. This dissuades them from such options and encourages the search for alternative treatments that are considered more natural and holistic.

In the past, the lack of adequate modern healthcare prompted many people to seek healing remedies from nature-based resources and ancient traditions. This led to the birth of alternative medicine practices that utilize plants, traditional rituals, and other unconventional ways of healing. Every culture around the world has its own unique system of traditional medicine that draws on the essence of wisdom passed down by ancestors as well as practical experience in dealing with various diseases and health issues. In addition to serving therapeutic purposes, these alternative medicines deeply integrate into cultural practices, reflecting the spirituality of the people [1]. The adoption of alternative medicine is increasing every year. In the early 2000s, many people started to engage in practices such as herbal concoctions, traditional massage, acupuncture, and reflexology. This

was driven by a cultural foundation and belief in unconventional medicine. In 2010, the number of clinics and healers offering alternative medicine surged, enlightening the developing society about the benefits of herbs and ancient techniques [1].

Research demonstrating its efficacy supported the growth of alternative medicine in 2020, implying that the use of these methods will inevitably lead to combined healthcare [1]. Integration between conventional and alternative medicine clinics is becoming more common, especially in urban areas. The increasing number reflects the growing receptiveness of those who value approaches to health that are born from the fusion of local wisdom and modern science [2]. Modern healthcare is now more readily available, but alternative medicine still has its supporters and space. The reasons vary from a belief in tradition or dissatisfaction with modern medicine to wanting a more natural and holistic solution. In some cases, the fault may not be with the person using it. The efficacy and safety of alternative medicine remain highly controversial and continue to be a subject of medical debate. Despite many success stories by individuals who have used alternative medicine, scientific evidence regarding its effectiveness is still lacking. Some conventional medical practitioners doubt the claims of alternative medicine due to the lack of empirical evidence. Alternative medicine should not be seen as a superior approach to modern medicine. When considering alternative medicine, especially when receiving conventional medical treatment, it is best to do your research and seek a doctor's advice [3].

This review seeks to offer a comprehensive overview of alternative medicine not just for the sake of alternative medicine but with the intention that those who read it will have a broader understanding of what alternative medicine actually entails. But it does not stop there; it also aims to help readers consider alternative medicine wisely, especially when they are already undergoing conventional medical treatment. The hope is that, by making these issues known, we can help you make informed decisions on how to best meet your needs when they come your way.

Alternative Medicine Overview

Alternative medicine is a medical treatment where the equipment and materials used are within the standards of medical treatment. The National Institute of Health (2005) defines alternative therapies as a collection of treatment and healthcare systems, practices, and products that typically do not form part of conventional medicine [4]. The alternative treatment methods used by the community in alternative medicine are sometimes very illogical because they do not follow the current concept of treatment, such as the use of animal media for disease transfer, the use of supernatural powers, and others [5]. Research [6] explains that there are various kinds of alternative medicine, including acupuncture, cupping, aura treatment, herbal medicines and jamu, reiki, ceragem (jade massage), reflexology, hypnosis, and gurah. In addition to these kinds of alternative treatments, there are also water treatments that can be used for alternative healing processes. The table below showcases a variety of alternative treatments commonly utilized by Indonesians.

This method aims to compare two commonly used alternative treatments: diagnostic alternative treatment and therapeutic alternative treatment. Diagnostic alternative medicine employs methods distinct from conventional medicine, whereas therapeutic alternative medicine bases its health treatment on empirical, traditional, or cultural beliefs.

Diagnostic Alternative Medicine

Various contexts, such as culture and history, have rooted alternative diagnostic methods with unique philosophies and techniques. Diagnostic practices have existed for thousands of years in different parts of the world. We believe that these methods aim to identify imbalances or disturbances in the body's natural state, which are the primary cause of disease. Diagnostic methods rely on empirical beliefs to support all diagnostic activities. The techniques used involve a subjective and individualized approach when compared to conventional diagnostics. The use of alternative diagnostic methods also raises important regulatory and

ethical considerations. The same regulatory standards that govern conventional medical diagnostics do not apply to these methods in many countries. This may lead to differences in the quality and safety of alternative diagnostic practices. Making sure patients fully understand the nature and limitations of alternative diagnostics is a crucial ethical consideration.

There is increasing interest in combining alternative diagnostic methods with conventional medicine. This integrative approach aims to leverage the advantages of both systems to provide more comprehensive and personalized healthcare [7]. Some healthcare providers are beginning to incorporate certain alternative diagnostics into their practices, realizing their potential benefits. Diagnostic methods in alternative medicine provide a variety of culturally rich approaches to understanding health and disease. While these methods may not always conform to conventional scientific standards, their holistic and individualized approach offers a unique perspective on patient care. As the world of healthcare continues to evolve, these alternative diagnostics have the potential to become an important part of a more holistic and patient-centered approach to maintaining health. **Table 1** shows some journals covering diagnostic methods.

Table 1. Diagnostic Alternative Medicine Overview

Diagnostic Name	Definition	Side Effect	Clinical Data	Long-term use	Expert Recommendations
Reiki [8], [9]	A Japanese energy-healing practice involving gentle touch to balance the body's energy and promote relaxation	Feelings of fatigue, emotional reactions, or sensations of heat in the treated area.	There is no evidence to suggest that Reiki is clinically harmful	Loss of energy balance, psychological dependence	Uncommonly recommended as a primary treatment method by the medical and scientific community
Pharmacogenomics [10]	Research on how genes affect individual reactions to medications for tailored treatments	-	Safe to use in individualized medicine	Promotes proper treatment and reduces side effects	Highly recommended for personalized treatment
Nadi Pariksha [11]	Traditional Ayurvedic practice using pulse readings to evaluate health status	-	Limited, as it is widely used in traditional practices	Regularly used in Ayurvedic medicine	Recommended in the context of Ayurveda treatment
Iridology [12]	Diagnosis through iris patterns to assess overall health and organ conditions	It has no side effects	Not specifically explained	Can not be used for diagnosis	Not recommended as it may not aid in the diagnosis of systemic disease
Applied Kinesiology [13]	Evaluates muscle strength to diagnose and treat health imbalances	It has no side effects	Not specifically explained	It can be used for the long term based on long-standing research. There are cases showing improvement in condition lasting up to 49 years after treatment	Recommended by experts
Electrodermal Screening System [14]	Measures skin's electrical response to identify imbalances or sensitivities	-	Provides information on health conditions. However, results vary	Not fully evaluated	Recommend using EDS with caution
Reflexology [15]	Stimulates reflex points on feet or hands to improve overall well-being	It has no side effects	Relatively safe to use, especially with no significant side effects	It can be used for the long term as it has no side effects	Recommended by experts based on this journal. Research shows that reflexology is effective in reducing symptoms of depression, and anxiety, and improving sleep.

Therapeutic Alternative Medicine

Therapeutic alternative medicine is a healthcare practice that does not fall under conventional medical care [16]. In the past, these treatments were often based on empirical, traditional, or cultural beliefs. Since strong scientific evidence did not always support these treatments, it is crucial to consult a professional before beginning any alternative medicine. However, today many scientific journals discuss therapeutic alternative medicine, indicating increased interest and research in this area [17].

Therapeutic alternative medicine is often considered more natural and has fewer side effects than conventional treatments. Nonetheless, the effectiveness of conventional treatments in curing diseases has not been completely efficient. In modern times, therapeutic alternative medicine has undergone significant development. Despite the centuries-long use of these methods, several factors have led to an increase in public interest in alternative medicine. One of the main trends is the use of integrative approaches, such as acupuncture, ayurveda, and herbal remedies, combined with theoretical knowledge to enhance their effects and benefits. These approaches show advances in therapeutic alternative medicine, combining traditional methods with modern scientific evidence to provide better results. Here are some journals that discuss therapeutic alternative medicine.

Table 2. Type of Therapeutic Alternative Medicine

Therapeutic Name	Definition	Side Effect	Interaction with Other Drugs	Clinical Data	Long-term use	Expert Recommendations
Acupuncture [18]	Traditional Chinese medicine technique involving needle insertion at specific body points for healing	Pain and bruising, infection, and dizziness	Blood thinning medications such as anticoagulants and aspirin	Safe when performed by trained and experienced practitioners	General well-being and energy balance of the body	World Health Organization (WHO) recognizes acupuncture as an effective treatment method
Ayurvedic [19]	Ancient Indian holistic healing system focusing on balance in body, mind, and spirit.	Nausea, diarrhea, dizziness, fatigue	Hypertension drugs, diabetes drugs	-	Can be used safely in the long term	WHO recognizes Ayurveda as an effective traditional system of medicine
Homeopathy [20]	System of alternative medicine that uses highly diluted substances to stimulate healing	Allergic reaction, herbal poisoning	Herbal supplements	Safe to do but needs more research	Psychological dependence	WHO does not recommend the use of Homeopathy to treat diseases.
Acupressure [21] [22]	Applying pressure to specific points on the body to relieve pain and restore balance	Blood pressure, skin irritation, heart problems	Antiemetic drugs such as ondansetron	-	Safe to use in the long term, it reduces stress and pain.	WHO and some health experts support it as a complementary therapy, not a substitute for conventional medicine
Vibrational medicine [23]	Uses energy frequencies to promote healing and harmonize the body	Dizziness or vertigo, fatigue, emotional changes, detoxification symptoms,	-	More research is needed to provide strength to the existing scientific evidence	Can be used in the long term, but in-depth long-term research is also needed.	Some experts support using this method, but it is still waiting for more scientific evidence, so research is needed that will provide scientific evidence.

Hypnosis/ Hypnotherapy [24]	Induces a trance-like state to address psychological or behavioral issues	Nausea, Vomiting, and Fatigue	Analgesic drugs to reduce pain, such as paracetamol	More studies are needed to understand the biological and psychological mechanisms behind the effectiveness of hypnosis, as well as how hypnosis affects body and brain function.	Safe because it has no serious side effects.	Recognized by the American Medical Association and Canadian Medical Association as a medical therapy tool since 1958, although its adoption by medical practitioners has been slow.
Message Therapy [25]	The manipulation of soft tissues to enhance health and relieve pain and tension	Muscle fatigue, bruising	Anticoagulant drugs such as aspirin or warfarin	-	Generally considered safe and has many health benefits	The American Massage Therapy Association recognizes massage therapy as an effective system of traditional medicine
Aromatherapy [26] [27]	therapy using essential oils from plants to promote health and well-being	Headache, nausea and vomiting	Tranquilizers, sleeping pills	-	Has been used for centuries for various health purposes	-
Polarity Therapy [28]	Balances energy flow in the body using touch, movement, and diet adjustments	Uncomfortable, intense emotional reactions during therapy	-	-	Is safe and provides benefits in the sustainability of patients using it for chronic conditions	Recognized by practitioners in the complementary field but there is no explicit evidence that these methods are recognized by the WHO.
Shiatsu [29]	Japanese therapy applying finger pressure to meridians for pain relief and relaxation	Headache and muscle pain	Oral medication, compress	Although there is preliminary evidence in favor of this method, further research is needed on its long-term effectiveness and whether or not it is safe.	Safe, However, its long-term effectiveness requires further research to ensure its benefits remain consistent	Has a national license, but there is no explicit evidence that it is recognized by WHO
<i>Echinacea</i> herbs [30]	Herbal treatments available as tea or capsules to boost immunity, alleviate colds, and reduce inflammation	Abdominal pain, angioedema, nausea, pruritus, rash, erythema, and urticaria	Zanaflex, azilect, and caffeine	Research limitations due to differences in methods and quality	Allergic reactions such as skin rashes, and respiratory problems	Before using these herbs can consult a doctor first
Herbs <i>St. John's wort</i> herbs [30]	Herbs used to treat mild to moderate depression, anxiety, and sleep disorders	Nausea, vomiting, tetanic uterine contractions, agitation, dizziness	Anti-depressants, antiretroviral drugs, and oral contraceptives	Limitations in clinical data	Gastrointestinal problems, skin reactions sensitivity and fatigue	-
<i>Ephedra</i> herbs [30]	Herbal treatment used to boost energy,	Increased blood pressure, insomnia,	Blood pressure control drugs and	-	Heart problems, dependence	-

	weight loss, and asthma symptoms	stroke, difficulty breathing	blood sugar control drugs			
Propolis [31]	A treatment that uses a resinous substance from bees to boost immunity	Itching or skin rash, vomiting, shortness of breath, inhibited blood clotting process	Anti-cancer drugs, antibiotics, drugs that use enzymes	-	Contact dermatitis or oral mucositis	Carried out with attention to potential allergies and interactions with other drugs
Yoga [19]	Physical, mental, and spiritual practice combining postures, breathing, and meditation	Muscle or joint injuries	-	Further rigorous clinical research is needed	Reduces stress and improves mental well-being	-
Hydrotherapy [21]	Uses water in various forms to treat injuries or improve health	Overheating and dehydration, blood pressure, skin irritation, respiratory problems	-	Clinical evidence supporting its effectiveness is limited or inadequate	Reduces muscle pain, reduces stress, improves blood circulation	Clinical research proves that hydrotherapy is safe
Biotherapy [32]	Therapies leveraging living organisms or their components for medical purposes	Skin rash, fever, muscle pain, swelling, redness	Antibiotics, antiseptics, immunosuppressive drugs, probiotics, and painkillers	More clinical research is needed to understand effectiveness and safety	This leads to autoimmune diseases such as rheumatoid arthritis or lupus	It is important to consult with a medical professional before undertaking this therapy
CRISPR Technology [33]	Advanced technique for editing DNA with high accuracy	Off Target Mutations	-	Still under research	Still under research	Recommended for research and genetic therapy/diagnostics Moderate
Chiropractic [34], [35]	Manual spinal adjustments to address musculoskeletal and nervous system issues	Pain and discomfort, soft tissue damage	Herbal supplements	-	Chronic pain reduction, stroke	Consider the indications for the use of this therapy
Chiropractic Care [36]	Therapy focusing on the spine to treat issues in muscles, bones, and nerves	Pain in the treated area	-	There is still controversy over certain conditions	Safe in managing back and neck pain	Recommended by many experts
Biofeedback [37]	A method to regulate bodily functions using tools that track physiological data	Fatigue, headache, or dizziness	-	Safe and effective	Safe for managing stress and chronic pain	Highly recommended by experts
Cupping [38]	A therapy where suction cups are placed on the skin to reduce muscle pain and improve blood flow	Pain, skin irritation, bruising, increased skin sensitivity	-	Research support, conducted by trained and experienced practitioners	Prolonged bruising and scarring, skin infections	World Health Organization (WHO) does not provide specific recommendations for cupping but emphasizes the importance of regulation, training, and research to ensure that the

						practice is safe and effective.
Gua Sha [39], [40]	A traditional scraping technique using a smooth tool to stimulate circulation and relieve tension	Infections, skin damage, blood clots	Anticoagulants, topical medications	Safe when practiced by trained practitioners	Still needs further research	Traditional Chinese Medicine (TCM) recommends gua sha as part of the treatment to improve blood circulation and relieve pain.
Qigong [41]	An ancient Chinese practice combining movement, breath control, and meditation to enhance well-being	Increased mental health symptoms, impaired energy balance, physical injury	-	Supportive research, conducted by trained and experienced practitioners	It is generally considered safe and has many health benefits.	Mayo Clinic and the National Center for Complementary and Integrative Health (NCCIH) in the United States, recognize the benefits of Qigong and recommend it as a complementary therapy for various health conditions.
Balneotherapy [42]	A therapeutic treatment using mineral-rich water baths to improve physical and mental health	Dehydration, dizziness, fainting, skin irritation	Topical medicine, blood thinning medicine, heart health medicine	Safe with beneficial effects for various conditions, especially osteoarthritis and rheumatic diseases.	Skin irritation, infection, fatigue, and muscle weakness	Many doctors and physiotherapists recommend balneotherapy for patients with musculoskeletal conditions, such as arthritis, back pain, and fibromyalgia.

DISCUSSION

Compare Diagnostic and Therapeutic

In practice, both diagnostic and therapeutic alternative medicine methods offer a distinct perspective, encompassing fundamental principles, techniques, and cultural values, allowing for a comparison between them based on their respective approaches to each aspect. The diagnostic alternative medicine method focuses on identifying imbalances or disorders in the body using cultural and traditional philosophical principles. The technique is subjective and individualized, utilizing clinical observation and experience. Therefore, the patient must agree on the characteristics and limitations of this method [1].

Therapeutic alternative medicine methods encompass a range of healthcare practices not typically found in traditional medical care. Often, these methods draw from centuries-old practices. Despite many of these methods not being fully supported by solid scientific evidence, they are often used as a complement to conventional medicine or as a primary option by some individuals. Even though these methods offer a unique perspective and potential in maintaining health, some aspects need to be considered critically.

Concern Regarding Scientific Validity

The scientific validity of alternative diagnostic and therapeutic methods remains a contentious issue. While some practices have shown promise and success in treating certain conditions, many lack rigorous scientific evidence to substantiate their efficacy and safety. Randomized controlled trials (RCTs), considered the gold standard in conventional medical research, are often lacking for many alternative medicine practices. This is partly due to the complexity of standardizing these treatments for study purposes and the holistic nature of the practices, which resist reductionist methodologies. A meta-analysis of acupuncture, for example, found that while it is effective for some conditions like chronic pain and osteoarthritis, the overall quality of evidence is low due to methodological flaws and biases in the studies. Herbal medicine, while widely used, also suffers

from variability in the quality and composition of herbal preparations, making it difficult to draw definitive conclusions about their effectiveness [43].

Concern Regarding Regulation and Ethics

Alternative medicine relies heavily on regulation and ethics, which guarantee adequate training for practitioners and standardize practices to safeguard patient safety. Many countries regulate alternative medicine practices to varying degrees. For instance, in the United States, the Food and Drug Administration (FDA) regulates dietary supplements and herbal products, but oversight is less stringent compared to pharmaceuticals. The World Health Organization (WHO) also advocates for integrating traditional and complementary medicine into national health systems, emphasizing the need for regulation and quality control [1]. Ethically, practitioners of alternative medicine must ensure that their treatments do not interfere with or replace essential conventional medical care, particularly for serious conditions such as cancer or cardiovascular diseases [43]. They must also obtain informed consent from patients, clearly communicating the benefits, risks, and scientific support for the treatments they offer.

In the context of regulation and ethics, it is crucial to take into account the necessity of standardizing practice and providing training for alternative practitioners. Consistent regulation is necessary to ensure that patients receive safe and quality care. In discussions about the effectiveness and safety of alternative methods, it is important to remember that each approach must be evaluated individually and with caution. Interactions with conventional medicine, potential side effects, and the long-term safety of the methods need to be thoroughly considered.

Integration-Based Approach

There is a growing interest in integrating alternative diagnostic methods with conventional medicine to provide a more comprehensive and personalized approach to healthcare. Integrative medicine integrates evidence-based practices from conventional medicine with effective alternative therapies. People are increasingly recognizing this approach in managing chronic diseases, pain, and mental health conditions. For example, some healthcare providers incorporate acupuncture into pain management programs, recognizing its benefits in reducing pain and improving the quality of life for patients with chronic conditions [44]. Similarly, traditional practices like mindfulness and meditation have gained widespread acceptance as complementary therapies for stress reduction and mental health enhancement. Moreover, while interest in the integration of alternative diagnostic and therapeutic methods with conventional medicine continues to increase, it is important not to dismiss the need for robust scientific evidence and evidence-based approaches in healthcare practice. Balancing tradition and innovation in healthcare will be key to providing holistic and effective care for patients. Therefore, while alternative diagnostic and therapeutic methods offer unique and potential approaches in healthcare, it is crucial to maintain critical thinking, ensuring that the practice is based on solid scientific evidence, high ethical standards, and a balanced integration with conventional medicine.

CONCLUSIONS

Alternative medicine includes a variety of diagnostic and therapeutic methods that differ from conventional medical approaches. Alternative diagnostic methods aim to identify imbalances or causes of disease in the body using techniques such as energy analysis, specialized physical examinations, or personalized approaches. Meanwhile, alternative therapeutic methods focus on healing and restoring health through various techniques, such as acupuncture, herbs, massage, or mind-body practices. Both approaches share common characteristics that reflect a holistic philosophy, including personalization of treatment, a focus

on stimulating the body's natural healing abilities, and the use of non-invasive methods or natural materials. They view the body as an interrelated system, considering physical, mental, and spiritual well-being in the process of diagnosis and treatment.

Despite their popularity, alternative diagnostic and therapeutic methods face challenges such as the need for stronger scientific validation, variability in quality of practice, potential interactions with conventional medicine, and lack of consistent regulation. However, recent trends show increasing interest in integrating these methods with conventional medicine, aiming to provide more comprehensive and patient-centered care. To advance the field, more rigorous scientific research, standardization of practice and training, improved communication between alternative and conventional practitioners, and the development of appropriate ethical and regulatory guidelines are required. With a balanced and evidence-based approach, the integration of alternative diagnostic and therapeutic methods with conventional medicine has the potential to offer a more holistic and effective approach to healthcare, taking into account the uniqueness of each individual and capitalizing on the strengths of different systems of treatment. We can also conclude that therapeutic methods are more prevalent than diagnostic ones.

REFERENCES

- [1] World Health Organization. WHO global report on traditional and complementary medicine 2019. Geneva: WHO; 2019. Available from: <https://www.who.int> [Accessed 10 Mar 2024].
- [2] Barnes P, Bloom B, Nahin R. Complementary and alternative medicine use among adults and children: United States, 2007. *Natl Health Stat Report*. 2010;Dec(10):1–23. doi:10.1037/e623942009-001.
- [3] Birhan W, Giday M, Teklehaymanot T. The contribution of traditional healers' clinics to public health care system in Addis Ababa, Ethiopia: A cross-sectional study. *J Ethnobiol Ethnomed*. 2011;7:39. doi:10.1186/1746-4269-7-39.
- [4] Kamaluddin R. Pertimbangan dan alasan pasien hipertensi menjalani terapi alternatif komplementer bekam di Kabupaten Banyumas. *Soedirman J Nurs*. 2010;5(2):95–104. doi:10.20884/1.jks.2010.5.2.276.
- [5] Fanani S, Dewi TK. Health belief model pada pasien pengobatan alternatif supranatural dengan bantuan dukun. 2014.
- [6] Ayu DA, Pudjibudojo JK. Pengobatan alternatif sebagai upaya penyembuhan penyakit. 16(2):2503–0949. doi:10.32528/ins.v%vi%oi.2053.
- [7] Ng JY, Cramer H, Lee MS, Moher D. Traditional, complementary, and integrative medicine and artificial intelligence: Novel opportunities in healthcare. *Integr Med Res*. 2024;13:101024. doi:10.1016/j.imr.2024.101024.
- [8] Ozcan Yuce U, Taşcı S. Effect of Reiki on the stress level of caregivers of patients with cancer: Qualitative and single-blind randomized controlled trial. *Complement Ther Med*. 2021;58:102708. doi:10.1016/j.ctim.2021.102708.
- [9] Vergo M, Broglio K, Pinkson B, Li Z, Tosteson T. The impact of Reiki versus massage on symptoms for hospitalized patients: A single rural academic center prospective cohort study (SA527B). *J Pain Symptom Manage*. 2018;55:654. doi:10.1016/j.jpainsymman.2017.12.351.
- [10] Ali M, Al-Lohedan H, Bhati R, MJ M. Interaction of the lysozyme with anticoagulant drug warfarin: Spectroscopic and computational analyses. *Heliyon*. 2024;10:e30818. doi:10.1016/j.heliyon.2024.e30818.
- [11] Fatangare M, Bhingarkar S. A comprehensive review on technological advancements for sensor-based Nadi Pariksha: An ancient Indian science for human health diagnosis. *J Ayurveda Integr Med*. 2024;15(3):100958. doi:10.1016/j.jaim.2024.100958.
- [12] Buchanan TJ, Sutherland CJ, Strettle RJ, Terrell TJ, Pewsey A. An investigation of the relationship between anatomical features in the iris and systemic disease, with reference to iridology. *Complement Ther Med*. 1996;4(2):98–102. doi:10.1016/S0965-2299(96)80025-2.
- [13] Rosner A, Cuthbert S. Applied kinesiology: Distinctions in its definition and interpretation. *J Bodyw Mov Ther*. 2012;16:464–87. doi:10.1016/j.jbmt.2012.04.008.
- [14] Barrett S. Close examination of a ZYTO electrodermal screening system.
- [15] Song RH, Kim DH. The effects of foot reflexion massage on sleep disturbance, depression disorder, and the physiological index of the elderly. *Taehan Kanho Hakhoe Chi*. 2006;36:15–24. doi:10.4040/jkan.2006.36.1.15.
- [16] Ng JY, et al. The brief history of complementary, alternative, and integrative medicine terminology and the development and creation of an operational definition. *Integr Med Res*. 2023;12:100978. doi:10.1016/j.imr.2023.100978.
- [17] Rao M, Yamini M, Phanindra CVS, Rao Y. Alternative medicine: New ways to treat diseases and therapies. *Indian J Pharm Sci*. 2021;83. doi:10.36468/pharmaceutical-sciences.744.
- [18] Vanderploeg K, Yi X. Acupuncture in modern society. *J Acupunct Meridian Stud*. 2009;2(1):26–33. doi:10.1016/S2005-2901(09)60012-1.
- [19] Hankey A. The scientific value of Ayurveda. *J Altern Complement Med*. 2005;11:221–5. doi:10.1089/acm.2005.11.221.
- [20] Gousta B. The role of homeopathy as a complementary and alternative medicine and its application. *Int J Med Rev*. 2017;4:62–3. doi:10.29252/ijmr-040207.
- [21] Dham S, Shah V, Hirsch S, Banerji MA. The role of complementary and alternative medicine in diabetes. *Curr Diab Rep*. 2006;6(3):251–8. doi:10.1007/s11892-006-0042-7.

- [22] Mehta P, Dhapte V, Kadam S, Dhapte-Pawar V. Contemporary acupressure therapy: Adroit cure for painless recovery of therapeutic ailments. *J Tradit Complement Med*. 2016;7. doi:10.1016/j.jtcme.2016.06.004.
- [23] Beri K. A future perspective for regenerative medicine: Understanding the concept of vibrational medicine. *Future Sci OA*. 2018;4:FSO274. doi:10.4155/fsoa-2017-0097.
- [24] Hartman D, Zimberoff D. Hypnosis and hypnotherapy in the milieu of integrative medicine: Healing the mind/body/spirit. Mar. 2011.
- [25] Field T, et al. Massage therapy effects on depression and somatic symptoms in chronic fatigue syndrome. *J Chronic Fatigue Syndr*. 2011;3:43–51. doi:10.1300/J092v03n03_03.
- [26] El-Anssary A. Aromatherapy as complementary medicine. 2020. doi:10.5772/intechopen.92021.
- [27] Sgoutas-Emch S, Fox T, Preston M, Brooks C, Serber E. Stress management: Aromatherapy as an alternative. *Sci Rev Altern Med*. 2001;5:90–5.
- [28] Fogarty S, Smith CA, Hay P. The role of complementary and alternative medicine in the treatment of eating disorders: A systematic review. *Eat Behav*. 2016;21:179–88. doi:10.1016/j.eatbeh.2016.03.002.
- [29] Kobayashi D, Shimbo T, Hayashi H, Takahashi O. Shiatsu for chronic lower back pain: Randomized controlled study. *Complement Ther Med*. 2019;45:33–7. doi:10.1016/j.ctim.2019.05.019.
- [30] Hepner DL, Harnett M, Segal S, Camann W, Bader AM, Tsen LC. Herbal medicine use in parturients. *Anesth Analg*. 2002;94(3). Available from: https://journals.lww.com/anesthesia-analgesia/fulltext/2002/03000/herbal_medicine_use_in_parturients.39.aspx
- [31] Miguel M, Antunes M. Is propolis safe as an alternative medicine? *J Pharm Bioallied Sci*. 2011;3:479–95. doi:10.4103/0975-7406.90101.
- [32] Ostovar M, Shams M, Mahmoudi M, Dehghan A, Moini Jazani A, Hashempur MH. Prevalence, patterns, and disclosure of complementary and alternative medicine (CAM) use among patients with thyroid diseases: A cross-sectional study in Iran. *Heliyon*. 2024;10(13):e33436. doi:10.1016/j.heliyon.2024.e33436.
- [33] Zhang T, et al. Strategies for organic nanoparticles delivering CRISPR/Cas9 for cancer therapy: Challenges and breakthroughs. *Mater Des*. 2024;244:113097. doi:10.1016/j.matdes.2024.113097.
- [34] Hussain Z, Quigley EM. Systematic review: Complementary and alternative medicine in the irritable bowel syndrome. Feb. 2006. doi:10.1111/j.1365-2036.2006.02776.x.
- [35] Arold H, et al. Use of alternative medicine by women with early-stage breast cancer. 1999.
- [36] Ziegler AML, Salisbury SA, Maiers M. Discrepant perceptions of biopsychosocial and active care recommendations between doctors of chiropractic and midlife and older adult patients: A descriptive survey. *J Manipulative Physiol Ther*. 2022;45(9):623–32. doi:10.1016/j.jmpt.2023.04.003.
- [37] Ma CH, et al. The psychological and physiological effects of integrated cognitive-behavioral and biofeedback therapy on panic disorder: A randomized controlled trial. *J Formos Med Assoc*. 2023;122(12):1305–12. doi:10.1016/j.jfma.2023.07.007.
- [38] Zhang Z, Pasapula M, Wang Z, Edwards K, Norrish A. The effectiveness of cupping therapy on low back pain: A systematic review and meta-analysis of randomized control trials. *Complement Ther Med*. 2024;80:103013. doi:10.1016/j.ctim.2024.103013.
- [39] Min Y, Hongyan Z, Rongzhao Y, Qinchuan S, Yaoyao B. Gua Sha attenuates thermal hyperalgesia and decreases proinflammatory cytokine expression in serum in rats with lumbar disc herniation induced by autologous nucleus pulposus. *J Tradit Chin Med*. 2018;38(5):698–704. doi:10.1016/S0254-6272(18)30908-7.
- [40] Braun M, et al. Effectiveness of traditional Chinese ‘Gua Sha’ therapy in patients with chronic neck pain: A randomized controlled trial. *Pain Med*. 2011;12:362–9. doi:10.1111/j.1526-4637.2011.01053.x.
- [41] Ko LH, Hsieh YJ, Wang MY, Hou WH, Tsai PS. Effects of health Qigong on sleep quality: A systematic review and meta-analysis of randomized controlled trials. *Complement Ther Med*. 2022;71:102876. doi:10.1016/j.ctim.2022.102876.
- [42] Lv X, et al. The effectiveness of balneotherapy and aquatic exercise on bone metabolism: A systematic review and meta-analysis. *Complement Ther Clin Pract*. 2021;44:101429. doi:10.1016/j.ctcp.2021.101429.
- [43] Tabish S. Complementary and alternative healthcare: Is it evidence-based? *Int J Health Sci (Qassim)*. 2008;2:1.
- [44] Nielsen A, Dusek JA, Taylor-Swanson L, Tick H. Acupuncture therapy as an evidence-based nonpharmacologic strategy for comprehensive acute pain care: The academic consortium pain task force white paper update. Sep. 2022. Oxford University Press. doi:10.1093/pm/pnac056.