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White Paper (Draft) on
Ayush Interventions for Mind and Body Health

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*White Paper (Draft) on
Ayush Interventions for Mind and Body Health*

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Preface

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This document is a draft white paper that responds to a growing and urgent public health challenge: the rising burden of interconnected mental, lifestyle, and chronic disorders. Current health systems, which often treat mind and body as separate domains, have had limited success in addressing root causes, supporting long-term resilience, or achieving population-level impact. The convergence of mental health conditions, non-communicable diseases, and lifestyle-related disorders now represents one of the most pressing global health concerns. What this really means is that symptom-focused and fragmented approaches are no longer sufficient. Preventive, sustainable, and behaviour-oriented solutions are needed.

By foregrounding integrated mind–body health through Ayush systems, this draft white paper addresses critical gaps in contemporary healthcare delivery, particularly in prevention, long-term management, and community-level implementation. Ayush systems offer a fundamentally different paradigm. They recognize the inseparability of mind and body and emphasize lifestyle regulation, personalization, prevention, and self-regulation.

Together, these principles offer a pathway to strengthen healthcare delivery in ways that are culturally grounded, scalable, and aligned with modern public health priorities. This draft captures that significance and translates it into an evidence-informed, forward-looking framework. This document is intentionally presented as a draft and is meant to foster discussion and constructive debate on the topics outlined here. It is not a final policy position.

The final output will take the form of a shorter Synthesis Document, distilling the core insights and recommendations from this draft. That synthesis will be published on our website for a specific period of time to invite final comments and suggestions from a broader range of stakeholders. After incorporating feedback and addressing substantive comments, the finalized document will be published and formally presented to the World Health Organization; the Ministry of Ayush, Government of India; and the governments of other countries for further deliberation and meaningful action at the higher level.

This draft white paper was developed through a structured, multi-stream collaborative process involving subject-matter experts across Ayush disciplines. Each stream worked within a shared guiding framework while preserving the conceptual integrity of its respective system. Authors conducted narrative syntheses of classical foundations and contemporary clinical evidence. Drafts were refined through an internal review to ensure coherence across streams, consistency in terminology, and alignment with the overarching objectives of the paper.

¹ Professor and Program Director of Ayurvedic Medicine at Southern California University of Health Sciences, USA.

At this stage, this draft white paper document provides:

- A consolidated, evidence-informed articulation of Ayush contributions to mind–body health
- Conceptual clarity for researchers, clinicians, and policymakers
- Identification of key research gaps and methodological priorities
- A foundation for constructive dialogue between traditional systems and mainstream healthcare

In its current form, this draft serves both as a reference point and as a strategic conversation starter for advancing integrative approaches to mind–body health. Please feel free to participate in the process by writing to me with your specific comments and suggestions that would strengthen the final output.

Thank you

Anupama

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Ayurveda

Interventions for Mind and Body Health

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Executive Summary

Lifestyle disorders and mental disorders pose a critical public health crisis today. Their ever-increasing burden points to larger healthcare challenge in the future. The coexistence and interlinked presence of conditions such as anxiety, depression, obesity, diabetes etc. are due to their shared behavioral, psychological and biological pathways. The current healthcare strategies largely address mind and body issues as isolated entities. Emphasis on symptom management results in unmet needs related to addressing underlying causes and strengthening preventive approaches. As a result, effective, scalable, and sustainable care remains largely unavailable for most of global population.

Ayush systems, particularly Ayurveda, offer a unified understanding of mind and body as inseparable and continuously interacting entities. Moreover, these systems enjoy sustained public acceptance, strong cultural credibility, and a well-codified body of knowledge. Harnessing these strengths through integration with existing healthcare systems can support progress toward ‘health for all’ in a more inclusive, scalable, and sustainable manner. The doctrines of Ayurveda emphasizing lifestyle regulation, ethical conduct, personalization of care, precedence of prevention over cure, align strongly with contemporary needs for mind-body health.

The Ayurveda interventions for mind-body health integrate lifestyle and behavioral corrections with psychological and therapeutic management. Core preventive strategies include *Achara Rasayana*, *Sadvritta*, *Dinacharya* and *Ritucharya* regimens, which collectively promote mental stability, resilience, and healthier lifestyle choices. Therapeutic approaches such as *Sattvavajaya Chikitsa*, *Medhya Rasayana*, and *Panchakarma* target both psychological and physiological balance. Emerging clinical evidence suggests benefits in stress reduction, mood regulation, cognitive enhancement, metabolic control, and overall improvement in quality of life.

This document recommends strengthening the scientific foundation of mind–body interventions from Ayurveda through rigorous, well-designed research. The key recommendations include conducting adequately powered randomized and real-world studies, improving standardization and quality control of interventions, integrating objective biomarkers and validated outcome measures, and ensuring robust safety monitoring and long-term follow-up. The need for developing translational frameworks that translate concepts of Ayurveda into operable models for integration with mainstream healthcare is also emphasized. Such systematic integration would enable Ayurveda to evolve into a credible and evidence-based contributor to global need to maintain mind–body health.

1. Introduction

Mental disorders manifest as psychological disturbances characterized mostly by cognitive impairment, emotional dysregulation, and behavioral anomalies. Reportedly, 15 % of global population suffered from mental disorders in year 2023, where anxiety disorders and depression were most prevalent.¹ The noncommunicable diseases which are essentially ‘lifestyle’ disorders, also form a significant health burden. Globally, lifestyle disorders—often referred to as “silent killers”—accounted for approximately 43 million deaths in 2021.²

Many existing strategies for management of lifestyle disorders prioritize disease outcomes, rather than providing a systematic attention. This fragmented approach often leads to overlooked co-morbidities and inadequately addressed risk factors. Availability of mental health resource is severely limited in low- and middle-income countries and remains concerning in developed settings.³ Social and economic barriers, together with limited population-level scalability of current therapeutic models, further widen this resource gap. As a result, the delivery of effective and sustained strategies for both prevention and management is restricted.

Strong bidirectional links between mental disorders and lifestyle disorders significantly intensify this ‘mind-body’ health crisis. For instance, mental disorders such as anxiety and depression are closely associated with lifestyle factors including physical inactivity, unhealthy dietary patterns, disturbed sleep, etc.⁴ Further, this flawed lifestyle predisposes individuals to lifestyle disorders such as obesity, diabetes mellitus, and cardiovascular diseases. Thus, mental and lifestyle disorders should be considered as interconnected manifestations, rather than as independent or isolated conditions.

The concept of ‘mind-body health’ offers a comprehensive framework to understand and respond to the escalating burden of mental and lifestyle disorders. The integrative and traditional medicine systems, such as Ayurveda understand these inseparable linkages and are looked upon to address this crisis. These are inherently aligned toward prevention and holistic sustainable healthcare. Owing to their strong community roots and cultural acceptability, Ayush medicine systems are well suited for mass-level implementation.

When integrated as enabling components of healthcare, Ayush systems can strengthen preventive strategies, improve quality of life, and address critical gaps in comprehensive mind–body health management. This white paper aims to articulate an evidence-based conceptual framework and propose future directions for positioning Ayurveda as a comprehensive supportive approach to mind–body health. It will serve as a guiding document for researchers, clinicians, and policymakers seeking holistic and individualized solutions to the rising global burden of mental and lifestyle disorders.

1 Mental Health, Institute for Health Metrics and Evaluation. <https://www.healthdata.org/research-analysis/health-topics/mental-health> (accessed January 19, 2026)

2 Noncommunicable Diseases, World Health Organization, <https://www.who.int/news-room/fact-sheets/detail/noncommunicable-diseases> (accessed January 19, 2026)

3 Fan Y, Fan A, Yang Z, Fan D. Global burden of mental disorders in 204 countries and territories, 1990-2021: results from the global burden of disease study 2021. *BMC Psychiatry*. 2025 May 15;25(1):486. doi: <https://doi.org/10.1186/s12888-025-06932-y> PMID: 40375174; PMCID: PMC12080068.

4 Firth J, Solmi M, Wootton RE, Vancampfort D, Schuch FB, et al. A meta-review of “lifestyle psychiatry”: the role of exercise, smoking, diet and sleep in the prevention and treatment of mental disorders. *World Psychiatry*. 2020 Oct;19(3):360-380. doi: <https://doi.org/10.1002/wps.20773> PMID: 32931092; PMCID: PMC7491615.

2. Ayurveda Framework for Mind–Body Health

Mind and body are often depicted as interconnected yet functionally distinct, with psychological and somatic processes following parallel pathways. In contrast, Ayurveda conceptualizes them as intrinsically unified. The emphasis on their continuous, reciprocal interaction, such that understanding or treating one independently of the other remains incomplete, is distinctive.

Ayurveda recognizes health as a holistic state where body, mind, senses and spirit harmoniously sustain and thrive.⁵ The definition of health from Ayurveda perspective thus emphasizes upon creating a delicate yet vital equilibrium of *Dosha-Dhatu* and *Mala* in body, along with a stable state of *Manas* (mind).

Further, this unified mind–body paradigm forms the foundation of the personalized approach to medicine. Central to this is the concept of *Prakriti*, which denotes an individual’s physiological identity based on distinct mental attributes as well as bodily characteristics. These metabolic predispositions affect both bodily and mental functioning, demanding coordinated mind–body adaptation—an aspect largely underemphasized in conventional biomedicine.⁶

The *Tridosha* (*Vata, Pitta, Kapha*) govern body’s physiological functions, while *Triguna* (*Sattva, Rajas, Tamas*) govern the mind and consciousness. Notably, both originate from the *Pancha Mahabhuta*, underscoring their shared ontological roots. While imbalances in *Dosha* primarily affect the body and those in *Guna* influence the mind, they remain interdependent due to their shared foundational basis.⁷

At the etiological level, Ayurveda attributes the origin of both mental and lifestyle-related disorders to the overarching concept of *Prajnaparadha*—errors of judgment arising from impaired intellect, self-control, and memory. These mind lapses manifest as unhealthy behaviors, inappropriate dietary habits, emotional dysregulation, and disregard for ethical and lifestyle discipline. As a result, somatic and psychological regulations are simultaneously disturbed and various mind-body pathologies are initiated.⁸

Ayurveda recommends *Dashavidha Pariksha*, a comprehensive ten-component evaluation of the diseased individuals before formulating the treatment plan.⁹ This methodology incorporates the assessment of both body and mind strength in a holistic way. Further, the Charaka Samhita highlights the centrality of mental states in disease progression by stating- “*Vishado Rogavardhananam*,” indicating that grief or despair significantly aggravates somatic diseases too.¹⁰

5 Sushruta Samhita, Sutra Sthana Chapter 15, Verse 41, <https://niimh.nic.in/ebooks/esushruta/?mod=read>

6 Patwardhan B, Bodeker G. Ayurvedic genomics: establishing a genetic basis for mind-body typologies. *J Altern Complement Med.* 2008 Jun;14(5):571-6. <https://doi.org/10.1089/acm.2007.0515> PMID: 18564959.

7 Shilpa S, Venkatesha Murthy CG. Understanding personality from Ayurvedic perspective for psychological assessment: A case. *Ayu.* 2011 Jan;32(1):12-9. doi: <https://doi.org/10.4103/0974-8520.85716> PMID: 22131752; PMCID: PMC3215408.

8 Charaka Samhita Vimana Sthana, Chapter 3, Verse 20, <https://niimh.nic.in/ebooks/ecaraka/?mod=read>

9 Charaka Samhita Vimana Sthana, Chapter 8, Verse 94 <https://niimh.nic.in/ebooks/ecaraka/?mod=read>

10 Charaka Samhita Sutra Sthana, Chapter 25, Verse 40 <https://niimh.nic.in/ebooks/ecaraka/?mod=read>

Thus, against the backdrop of prevalent compartmentalized disease models, Ayurveda presents a unified therapeutic framework that recognizes the inseparable nature of mind and body.

3. Conceptual Foundations for Mind-Body Health

Ayurveda emphasizes mind-body integration for holistic health through distinctive preventive and therapeutic practices centered on behavior and lifestyle interventions.

Acharya Rasayana represents a unique, non-pharmacological preventive strategy in Ayurveda. This is purely behavioral discipline centered on truthfulness, compassion, and emotional restraint, leading to mental calmness and resilience.¹¹ The moral and emotional regulation promotes holistic health promotion by enhancing mental clarity and enabling appropriate lifestyle decisions.

In alignment with this, the concept of *Sadvritta*, a code of right conduct governs social behavior, personal hygiene, emotional regulation, and harmony.¹² Adherence to *Sadvritta* supports mental stability and cognitive clarity, thereby mitigating the development of mental and lifestyle-related disorders by avoiding *Prajnaparadha*. Thus, Ayurveda conceptualizes mental health preservation as a routine, socially integrated practice, moving beyond reactive clinical interventions toward sustained mind-body health.

Beyond ethical and social conduct, Ayurveda also underscores alignment of lifestyle with natural biological rhythms through *Dinacharya*¹³ (daily regimen) and *Ritucharya*¹⁴ (seasonal regimen). Diet, physical activity, and mental practices are recommended to be aligned with circadian and seasonal rhythms. Such rhythmic alignment maintains the delicate *Dosha* balance in body and promotes mental calmness. These guidelines further highlight that environmental, physiological, and psychological regulations are intrinsically interconnected and mutually reinforcing.

The three types of treatments in Ayurveda reinforce integration of psychological regulation, and spiritual assurance with rational therapeutics. Of these, the '*Sattvavajaya Chikitsa*' focuses on strengthening mind in order to restrain from unwholesome emotions and actions.¹⁵ A positive mental state supports physiological balance, highlighting the unity of mind and body health. A group of rejuvenative interventions known as '*Medhya Rasayana*' comprises primarily of nootropic herbal formulations supported with aforementioned behavioral regimens. These interventions aim at enhancing memory, cognition, emotional stability, and promote stress resilience as well as neurocognitive health.

Panchakarma therapy is the key therapeutic approach that facilitates deep systemic detoxification (*Shodhana*) and restores physiological and psychological balance. Elimination of accumulated toxins (*Ama*) and correction of *Dosha* imbalance positively influence bodily functions and mental states. *Panchakarma* also prepares the body and mind for *Rasayana* therapies, thereby enhancing resilience and supporting sustained mental and physical wellbeing.

11 Charaka Samhita Chikitsa Sthana Chapter 1, Sub chapter 4, Verse 30-35, <https://niimh.nic.in/ebooks/ecaraka/?mod=read>

12 Charaka Samhita Sutra Sthana, Chapter 8, Verse 18, <https://niimh.nic.in/ebooks/ecaraka/?mod=read>

13 Charaka Samhita Sutra Sthana, Chapter 5, Verse 20-102, <https://niimh.nic.in/ebooks/ecaraka/?mod=read>

14 Charaka Samhita Sutra Sthana, Chapter 6, Verse 7-48, <https://niimh.nic.in/ebooks/ecaraka/?mod=read>

15 Charaka Samhita Sutra Sthana, Chapter 11, Verse 54, <https://niimh.nic.in/ebooks/ecaraka/?mod=read>

Collectively, these foundational practices promote mental calmness, ethical living, and balanced lifestyle. They lay the groundwork for psychological health that sustains physiological resilience. This reflects Ayurveda's approach towards mind-body health as a holistic paradigm that extends well beyond symptom-oriented care.

4. Evidence Landscape

The evidence base supporting the use of Ayurveda for achieving mental and physical health remains modest; yet encouraging and steadily expanding. The following overview provides a concise and representative summary.

Ayurveda Perspective for Happiness Index

Ayurveda conceptualizes happiness as an outcome of comprehensive health achieved through *Tridosha* balance, disciplined daily and seasonal regimens, ethical conduct, and rejuvenation therapies. Clinical and observational studies demonstrate that these practices are associated with improvements in mood, stress regulation, sleep quality, cognitive function, and overall quality of life. A study highlighted significant benefits of holistic multimodal Ayurvedic wellness programs that integrate mind-body-spirit approaches. There was sustained improvement in spirituality, mindfulness, and mood among participants.¹⁶ Another study carried out among undergraduate Ayurveda students revealed that strong adherence to *Achara Rasayana* demonstrated good academic performance, physical and mental health, and positive peer relationships among them.¹⁷

Ayurveda Interventions for Mental Wellbeing

Pharmacological and non-pharmacological interventions from Ayurveda offer a promising therapeutic approach for addressing the growing prevalence of mental health issues. A study done among geriatric population asserted efficacy of certain herbs and *Panchakarma* procedures for age related cognitive decline.¹⁸ Highquality randomized controlled trials have supported standardized *Ashwagandha* (*Withania somnifera*) extracts for stress reduction, sleep improvement, and certain cognitive benefits, with objective biomarker changes (cortisol, serotonin) and good shortterm tolerability.^{19,20} Other classical *Medhya Rasayana* herbs such as Brahmi (*Bacopa monnieri*),²¹

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- 16 Patel S, Klagholz S, Peterson CT, Weiss L, Chopra D, et al. Psychosocial Effects of a Holistic Ayurvedic Approach to Wellbeing in Health and Wellness Courses. *Glob Adv Health Med*. 2019 Apr 29; 8:2164956119843814. doi: <https://doi.org/10.1177/2164956119843814> PMID: 31069162; PMCID: PMC6492358.
 - 17 Desai P, Wanjari A; From 5th World Ayurveda Congress 2012 Bhopal, Madhya Pradesh, India. 7-10 Dec 2012. PA01.04. Assessment of Achar Rasayan in domain of physical, mental & social health in Ayurveda students. *Anc Sci Life*. 2012 Dec;32(Suppl 1): S53. PMCID: PMC3800933.
 - 18 Chobe S, Chobe M, Metri K, Raghuram N. Yoga and Rasayana for Mental Health in Age-related Cognitive Decline - A Controlled Trial, *Indian journal of science and technology*, 2022 Mar 15;9:364–370, doi: <https://doi.org/10.17485/IJST/v15i9.2243>
 - 19 Majeed M, Nagabhushanam K, Mundkur L. A standardized Ashwagandha root extract alleviates stress, anxiety, and improves quality of life in healthy adults by modulating stress hormones: Results from a randomized, double-blind, placebo-controlled study. *Medicine*, 2023 Oct;102, doi: <https://doi.org/10.1097/md.00000000000035521>
 - 20 Gopukumar K, Thanawala S, Somepalli V, Rao TSS, Thamamam VB, et al. Efficacy and Safety of Ashwagandha Root Extract on Cognitive Functions in Healthy, Stressed Adults: A Randomized, Double-Blind, Placebo-Controlled Study. *Evid Based Complement Alternat Med*. 2021 Nov 30; 2021:8254344. doi: <https://doi.org/10.1155/2021/8254344> PMID: 34858513; PMCID: PMC8632422.
 - 21 Sarhyal A, Chate S, Tubaki BR, Thakur R. Efficacy of Brahmi Vati and Aswagandharista in major depressive disorder: A randomized controlled trial. *J Ayurveda Integr Med*. 2024 Nov-Dec;15(6):101022. doi: <https://doi.org/10.1016/j.jaim.2024.101022> Epub 2024 Dec 3. PMID: 39631219; PMCID: PMC11663963.

and Jatamansi (*Nardostachys jatamansi*),²² also *Panchakarma* therapy such as *Shirodhara*²³ have shown promising preliminary or comparative data for anxiety and mood/sleep outcomes.

Ayurveda Interventions for Lifestyle Disorders

Ayurveda is well known for addressing lifestyle disorders such as diabetes mellitus, obesity and metabolic syndrome, cancer etc. through its holistic principles. Key findings demonstrate that Ayurveda interventions show significant efficacy in managing type 2 diabetes mellitus, with HbA1c reductions ranging from 0.8% to 2.1% and fasting blood glucose reductions of 18–63 mg/dl.^{24,25} For obesity and metabolic syndrome, interventions achieved 27% BMI improvements and significant reductions in lipid profiles.²⁶ In cancer care, Ayurvedic formulations demonstrated myeloprotective effects and reduced chemotherapy-induced toxicity.^{27,28} Addiction disorders, particularly alcohol dependence, represent an emerging area of Ayurvedic research with limited but promising evidence with multiple Ayurveda interventions tested for efficacy.^{29,30} Ayurvedic interventions for women's health have also been evaluated across reproductive and menopausal stages, with evidence supporting efficacy. For instance, a study evaluated *Shatavari* (*Asparagus racemosus*) root extract as an alternative to hormone replacement therapy (HRT), with promising symptomatic results.³¹ A randomized, double-blinded, placebo-controlled study of fenugreek seed extract in perimenopausal women demonstrated significant symptomatic improvements and restoration of hormonal balance.³²

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- 22 Arabi F, Jithesh M, Shobhana MC. Efficiency of Jatamansi (*Nardostachys Jatamansi* [D. Don] DC.) and selected Yoga module in test anxiety of school-going children: A single-arm clinical trial. *Ayu*. 2024 Jan; 45:1:17-25 doi: .10.4103/ayu.AYU_5_19
 - 23 Tubaki BR, Verma A, Sasidharan A, Sulekha S, Chandrashekhar CR et al., Manasamitra vataka and Shirodhara Treatments Preserve Slow Wave Sleep and Promote Sleep Continuity in Patients with Generalized Anxiety Disorder and Co-Morbid Generalized Social Phobia. *Current Science*, 2016 July;111(2):283–292, doi: 10.18520/cs/v111/i2/283-292
 - 24 Elder C, Aickin M, Bauer V, Cairns J, Vuckovic N. Randomized trial of a whole-system ayurvedic protocol for type 2 diabetes. *Altern Ther Health Med*. 2006 Sep-Oct;12(5):24-30. PMID: 17017752.
 - 25 Sharma R, Shahi VK, Khanduri S, Goyal A, Chaudhary S, et al. Effect of Ayurveda intervention, lifestyle modification and Yoga in prediabetic and type 2 diabetes under the National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS)-Ayush integration project. *Ayu*. 2019 Jan-Mar;40(1):8-15. doi: 10.4103/ayu.AYU_105_19 PMID: 31831963; PMCID: PMC6892000.
 - 26 Rioux J, Howerter A. Outcomes from a Whole-Systems Ayurvedic Medicine and Yoga Therapy Treatment for Obesity Pilot Study. *J Altern Complement Med*. 2019 Mar;25(S1): S124-S137. doi: <https://doi.org/10.1089/acm.2018.0448> PMID: 30870013; PMCID: PMC6446167.
 - 27 Joseph CD, Praveenkumar V, Kuttan G, Kuttan R. Myeloprotective effect of a non-toxic indigenous preparation Rasayana in cancer patients receiving chemotherapy and radiation therapy-A pilot study. *J Exp Clin Cancer Res*. 1999 Sep;18(3):325-9. PMID: 10606177.
 - 28 Hardi H, Estuworo GK, Louisa M. Effectivity of oral ginger supplementation for chemotherapy induced nausea and vomiting (CINV) in children: A systematic review of clinical trials. *J Ayurveda Integr Med*. 2024 Jul-Aug;15(4):100957. doi: <https://doi.org/10.1016/j.jaim.2024.100957> Epub 2024 Aug 21. PMID: 39173346; PMCID: PMC11388353.
 - 29 Sharma M, Shetty SK, Devi P, Sharma A. Comparing the therapeutic potential of Drakshadi Kashaya against Mrudweekadi kashaya as adjunct to a multimodal Ayurveda approach in alcohol dependence: A parallel-arm randomized controlled study. *Journal of Research in Ayurvedic Sciences* 2025 May-June; 9(3): p 101-111 doi: 10.4103/jras.jras_373_24
 - 30 Singh M, Sahore S, Sharma S, Sharma, S, Sharma R. Role of Ayurvedic Interventions in Alcohol De-addiction – A Preferred Reporting Items for Systematic Reviews and Meta-analyses-based Systematic Review. *Journal of Ayurveda*; 2025 Apr-Jun;19(2): p 160-169, doi: 10.4103/joa.joa_148_25
 - 31 Gudise VS, Dasari MP, Kuricheti SSK. Efficacy and Safety of Shatavari Root Extract for the Management of Menopausal Symptoms: A Double-Blind, Multicenter, Randomized Controlled Trial. *Cureus*. 2024 Apr 8;16(4): e57879. doi: <https://doi.org/10.7759/cureus.57879> PMID: 38725785; PMCID: PMC11079574.
 - 32 Khanna A, John F, Das S, Thomas J, Rao J, et al. Efficacy of a novel extract of fenugreek seeds in alleviating vasomotor symptoms and depression in perimenopausal women: A randomized, double-blinded, placebo-controlled study. *J Food Biochem*. 2020 Dec;44(12): e13507. doi: <https://doi.org/10.1111/jfbc.13507> Epub 2020 Oct 6. PMID: 33025616.

Best integrative practices for Ayush

Integrating Ayurvedic interventions with existing health system may help improve outcomes while respecting patient preferences and cultural contexts. Moreover, several studies have integrated Ayurveda modalities with Yoga, spirituality etc. other complementary medicines too. The National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS)-Ayush integration project represents a national-level effort in India to integrate Ayurveda intervention, lifestyle modification, and Yoga with conventional diabetes care to reduce non-communicable disease burden.³³

5. Current Limitations and Research Gaps

While these efforts are encouraging towards building an evidence base, important limitations must be acknowledged. The sample sizes in many studies are small, limiting their statistical power and generalizability. Also, the quality and quantity of prospective randomized clinical studies is quite less as compared to reviews and observational studies. The complex and multimodal nature of Ayurveda interventions limit standardization and increase heterogeneity. The diversity of therapies (herbs, diet, lifestyle, *Panchakarma*, etc.), formulations, regimens, etc. limits protocol standardization. On the other hand, overtly reductionist study designs may fail to reflect holistic nature of Ayurveda. Further, variability in herbal material quality, extraction methods, and formulation composition may affect reproducibility and clinical outcomes. Incomplete reporting of outcomes is another crucial limitation. Studies often lack detailed safety monitoring, adverse event reporting, or long-term follow-up data. These shortcomings hinder proper evaluation of methodology and outcomes.

Further gaps are evident with research relying mainly on subjective psychological measures as mechanistic insights remain limited. There is limited integration of validated psychometric tools, objective biomarkers, or neurobiological correlates. The knowledge related to core constructs related to mind–body health—such as *Manas*, *Prakriti*, *Triguna* etc. is largely theoretical. The findings from fundamental research studies are rarely translated in operational clinical frameworks. This conceptual gap restricts coherent integration with mainstream medicine. Most Ayurveda research studies are conducted in Indian population, limiting generalizability to other populations. Cultural contexts, diet, genetic makeup, etc. may influence intervention effectiveness and acceptability. There is substantial knowledge gap when certain health conditions such as drug addiction are concerned. Ultimately, there is clear need to strengthen the quality of published evidence and formal guideline development for Ayurvedic interventions in general and especially for mind-body health.³⁴

6. Future Directions

Addressing the aforementioned limitations and gaps by rigorous research with sound methodology and translational focus is the need of the hour. Research prioritizing real-world effectiveness and integrative models of care would be especially valuable. Establishing

33 National programme for prevention and control of cancer, diabetes, cardiovascular diseases and stroke, Directorate General of Health Services, Ministry of Health and Family Welfare, New Delhi: Gov. of India; 2013. https://www.mohfw.gov.in/sites/default/files/Operational%20Guidelines%20of%20NPCDCS%20%28Revised%20-%202013-17%29_1.pdf (accessed January 23, 2026)

34 Bhapkar V, Nisargand V, Godatwar P, Bhalerao S. Research status of traditional & complementary medicine systems across the world. *J Ayurveda Integr Med.* 2025 Mar-Apr;16(2):101078. doi: <https://doi.org/10.1016/j.jaim.2024.101078> Epub 2025 Feb 8. PMID: 39923705; PMCID: PMC12169296.

rigorous quality standards for interventions—such as phytochemical characterization of herbal components and the development of validated tools to assess non-pharmacological elements—would be highly beneficial. This will enhance reproducibility, strengthen credibility and enable meaningful- within and across-study comparisons. Future research should prioritize sufficiently powered studies with long-term follow-up and rigorous evaluation of safety and efficacy in varied populations, to enhance generalizability. A clear mechanistic understanding of Ayurvedic interventions at metabolic and genomic levels is essential for their rational integration in public health frameworks. These insights could support the systematic and scalable implementation of personalized medicine.

7. Conclusion

Mind–body health has become an important public health issue, largely due to the combined burden of mental disorders and lifestyle diseases. The intrinsically unified view of mind and body in Ayurveda offers a comprehensive, preventive, and personalized framework for holistic and sustainable healthcare. While the existing evidence base for Ayurvedic mind–body interventions is encouraging, it remains constrained by methodological, mechanistic, and translational limitations. Addressing these gaps through rigorous, well-designed, and adequately powered studies—supported by robust safety monitoring, long-term follow-up, standardized intervention quality, and objective outcome measures—is essential. With systematic research designing, optimal reporting standards, and rational integrative models, Ayurveda can evolve from a complementary tradition into a scientifically grounded contributor to global mind–body health and wellbeing.

Yoga

Interventions for Mind and Body Health

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Executive Summary

Mind-body health has emerged as a critical public health priority due to the rising burden of stress-related mental conditions, lifestyle disorders, and functional health complaints that are not adequately addressed through symptom-based care alone. Conditions such as anxiety, depression, sleep disorders, metabolic syndrome, chronic pain, and addiction increasingly coexist, indicating shared psycho-physiological pathways rather than isolated diseases.

Ayush systems offer structured approaches that view mind and body as interdependent processes. Yoga, in particular, provides a disciplined framework of self-regulation that works through posture, breath, attention, and behaviour. Unlike biomedical models that often treat mind and body as separate domains, Yoga addresses functional imbalance by training the nervous system, improving stress adaptability, and refining self-awareness.

Evidence from clinical trials and systematic reviews indicates that Yoga-based interventions improve mental wellbeing, enhance autonomic balance, and enhance quality of life, and yield supportive outcomes in lifestyle-related disorders when used alongside standard care. There are now several hundred peer-reviewed studies published in journals such as *BMC Complementary Medicine and Therapies*, *Depression and Anxiety*, *Psychoneuroendocrinology*, *Frontiers in Psychology*, and *Journal of Diabetes & Metabolic Disorders* examining yoga interventions in mind–body health contexts.

This White Paper advocates for the responsible integration of Yoga into preventive healthcare, mental health services, and lifestyle disease management, with emphasis on standardisation, ethical delivery, and research-based policy decisions.

1. Introduction

Current burden of mental and lifestyle disorders

Mental health disorders are among the leading causes of disability globally. The World Health Organization reports that depression and anxiety alone affect more than 300 million people worldwide and contribute significantly to years lived with disability (World Health Organization 2025a). Lifestyle-related non-communicable diseases such as diabetes, cardiovascular disease, obesity, and substance dependence further compound this burden, often sharing behavioural and stress-related risk factors.

Gaps in conventional care

Despite advances in biomedical care, conventional healthcare systems face limitations in long-term management of chronic, stress-linked conditions. Fragmentation between mental and physical health services, dependence on pharmacological management, and limited emphasis on self-regulation and behaviour modification create gaps in sustained recovery and prevention.

Growing global interest in integrative and traditional medicine

In response to these gaps, there is increasing recognition of integrative health models that incorporate mind-body approaches. The WHO Traditional Medicine Strategy acknowledges the role of traditional systems in improving access to care and addressing chronic health challenges when supported by appropriate evidence and regulation (World Health Organization 2025b).

Purpose and scope of this White Paper

This document presents Yoga as a structured Ayush system contributing to mind-body health, outlining its conceptual foundations, evidence base, limitations, and future directions relevant to health policy and integrative care frameworks.

2. Yoga Framework for Mind-Body Health

Yoga is a classical system that understands health as functional harmony between body, breath, mind, and behaviour. In contrast to biomedicine, which primarily focuses on pathology and symptom reduction, Yoga emphasises regulation, awareness, and adaptability.

Yoga addresses mind-body integration through:

- **Asana:** improving physical stability, mobility, and somatic awareness
- **Pranayama:** regulating breath and autonomic nervous system activity
- **Dhyana:** cultivating attentional control and emotional stability
- **Yama and Niyama:** supporting behavioural and psychosocial health

This framework allows Yoga to function as both a preventive and supportive intervention across mental health and lifestyle-related conditions.

3. Conceptual Foundations for Mind-Body Health

Yoga is grounded in the understanding that mental disturbances influence physiological function and vice versa. The Yoga Sutras describe mental fluctuations (chitta vritti) as central to suffering and impaired functioning (Ramirez-Duran et al. 2025).

Key concepts relevant to mind-body health include:

- **Self-regulation:** training individuals to observe and modify internal responses
- **Stress adaptability:** improving tolerance and recovery through regulated breathing and attention
- **Functional balance:** maintaining equilibrium rather than suppressing symptoms

Modern psychophysiological research aligns with these principles, particularly in understanding stress, autonomic regulation, and mind-body interaction.

4. Evidence Landscape

Yoga and wellbeing, happiness, and quality of life

Systematic reviews indicate that Yoga practice is associated with improvements in quality of life, perceived wellbeing, and functional health across age groups. A review in *BMC Complementary Medicine and Therapies* reported positive effects of Yoga on stress, mood, and overall wellbeing (Basu-Ray et al., 2022).

Beyond individual trials, the existing literature reflects a substantial and growing body of research on Yoga and mind-body health. A bibliometric analysis identified more than 2,700 yoga-related systematic review records indexed in major scientific databases, including PubMed and Web of Science, highlighting the growing volume of research on yoga's role in mental health, stress regulation, quality of life, and lifestyle-related conditions (Wieland et al., 2021). Key journals contributing to this evidence base include *BMC Complementary Medicine and Therapies*, *Journal of Alternative and Complementary Medicine*, *Complementary Therapies in Medicine*, *Frontiers in Psychology*, and *Psychoneuroendocrinology*. This volume of research positions Yoga among the most extensively studied mind-body interventions globally.

Yoga for mental wellbeing

A meta-analysis published in *Depression and Anxiety* found that Yoga interventions resulted in significant reductions in depressive symptoms compared to usual care and waitlist controls (Cramer et al., 2013). Subsequent systematic reviews and controlled trials have reported beneficial effects of Yoga on anxiety disorders, stress-related conditions, and sleep disturbances, particularly when interventions are structured, supervised, and delivered over defined durations (Arya et al., 2025). These findings support Yoga's role as a non-pharmacological adjunct within mental health care rather than as a stand-alone substitute for clinical treatment.

WHO also recognises mind-body interventions, including Yoga-based practices, as supportive strategies within mental health promotion and non-pharmacological care models.

Lifestyle and behavioural interventions

Evidence from clinical studies suggests that Yoga improves metabolic parameters, including fasting glucose, lipid profile, blood pressure, and body composition, when used as an adjunct to standard lifestyle advice (Dutta et al., 2021). Meta-analyses and mechanistic studies published in journals such as *Psychoneuroendocrinology* and the *Journal of Diabetes & Metabolic Disorders* highlight stress modulation, behavioural regulation, and improved autonomic balance as mediating pathways underlying these metabolic effects (Pascoe et al., 2017).

Yoga in lifestyle-related disorders

Authoritative reviews from the U.S. National Center for Complementary and Integrative Health recognise Yoga as beneficial for chronic pain conditions, stress-related disorders, and supportive care in cancer survivorship, with an acceptable safety profile when appropriately taught (NCCIH, 2020). These reviews emphasise acceptable safety profiles when Yoga is appropriately adapted to clinical populations and delivered by trained professionals, reinforcing the importance of standardisation and clinical oversight.

5. Current Limitations and Research Gaps

Despite increasing evidence supporting Yoga-based interventions for mind-body health, several limitations continue to restrict their wider acceptance and systematic integration into healthcare systems.

A key challenge is the lack of standardised intervention protocols, with Yoga practices often described broadly and without consistent specification of practices, duration, or intensity. This limits reproducibility and comparability across studies. Additionally, variation in training and clinical orientation of Yoga instructors affects safe and appropriate application, particularly in populations with mental health conditions or chronic illness.

From a research standpoint, much of the available evidence is derived from short-term or small-scale studies, with limited long-term follow-up and inconsistent outcome measures relevant to clinical and policy decision-making. Integration into healthcare settings also remains uneven, with Yoga frequently positioned as an informal adjunct rather than a structured component of care pathways.

Addressing these gaps is essential for translating Yoga research into sustainable policy and practice.

6. Future Direction

Addressing the above limitations requires coordinated efforts across research, education, and health system integration.

Future initiatives should focus on developing standardised, condition-specific Yoga protocols that clearly define practices, dosages, contraindications, and expected outcomes. Such protocols would enhance research quality and support safe clinical application.

Strengthening education and accreditation frameworks is equally essential. Training programmes should include basic clinical understanding, safety considerations, and interdisciplinary communication skills, enabling Yoga professionals to work effectively alongside healthcare providers.

From a systems perspective, Yoga should be progressively integrated into primary healthcare, mental health services, and community health programmes as a structured intervention rather than an optional activity. Pilot integration models, particularly in preventive care and chronic disease management, can provide valuable evidence for implementation.

Research priorities should include long-term effectiveness studies, pragmatic trials in real-world settings, and collaborative research involving public health institutions. Emphasis on health economics, cost-effectiveness, and implementation feasibility will further support policy-level decision-making.

7. Conclusion

Yoga offers a structured approach to mind-body health through self-regulation, functional balance, and behavioural awareness. Its role is complementary to conventional care, addressing aspects of mental wellbeing and lifestyle regulation that are often insufficiently managed through symptom-focused treatment alone.

Available evidence supports Yoga's contribution to mental health, lifestyle modification, and quality of life when applied responsibly and alongside standard care. To realise its broader potential, greater emphasis is needed on standardisation, professional training, and integration within healthcare systems.

With appropriate research support and policy guidance, Yoga can serve as a valuable component of comprehensive and preventive mind-body health strategies.

AI Disclosure Statement

AI tools were used solely to enhance the language clarity and editorial quality of this manuscript. All conceptual content, interpretation of evidence, and final responsibility for the manuscript rest with the authors.

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Yoga and Naturopathy

Interventions for Mind and Body Health

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Executive Summary

Both mental disorders and NCDs share common lifestyle determinants, making them preventable through healthier habits. Managing NCDs often necessitates long-term interventions, as standard treatments may only alleviate symptoms rather than address the underlying issues. Furthermore, prolonged use of medications can lead to adverse effects. Yoga and naturopathy have emerged as promising adjuvants to conventional medical practices. Its increasing popularity stems from perceptions of safety, naturalness, and reduced adverse effects compared to standard therapies. Global utilization rates of yoga and naturopathy vary widely, indicating a rising public trust in these methods to enhance overall health and wellbeing. Yoga and Naturopathy provide a scientific basis for mind–body health, focusing on self-regulation, stress adaptation, lifestyle, and behavioral health determinants. By addressing maladaptive behaviors and enhancing the body’s regulatory mechanisms, these practices provide a holistic approach to promote self-repair and holistic health, prevent and manage both mental and physical (body) health issues. Many patients find that integrating yoga and naturopathy with other Ayush systems or conventional treatments leads to reduced disease burden and improved disease prevention, health outcomes, and quality of life. Ultimately, the growing acknowledgment of yoga and naturopathy highlights the importance of a more integrative approach to healthcare, addressing the interconnected nature of mental and physical health through lifestyle-oriented strategies.

Keywords: Ayush; Lifestyle disorders; Mental Health; Mind-body Medicine; Naturopathy; Yoga

1. Introduction

Mental disorders constitute a major public health challenge and are among the leading contributors to the global burden of disease. According to the *World Mental Health Report* released by the World Health Organization (WHO) in 2022, approximately 970 million people worldwide are affected by mental disorders (WHO, 2022). In 2021, nearly one in seven individuals globally was living with a mental health condition, with major depressive disorder emerging as the most prevalent, accounting for 75.72% of newly reported cases (Mao, 2025). In 2019, mental disorders were responsible for an estimated 418 million disability-adjusted life years (DALYs), representing nearly 16% of global DALYs, alongside an enormous economic burden estimated at USD 5 trillion (Arias, 2022). Despite this substantial burden, mental health services remain critically under-resourced, resulting in a wide treatment gap. Globally, only about 29% of individuals with psychosis and approximately one-third of those with depression receive formal mental health care, highlighting persistent inequities in access, availability, and quality of services (WHO, 2025).

The development and progression of mental disorders are shaped by a complex interplay of biological, psychological, and lifestyle-related factors. Chronic stress, for instance, can lead to sustained elevations in cortisol, contributing to sleep disturbances and heightened sensitivity to negative emotional stimuli. In contrast, regular physical activity, effective stress management, and strong social connections have been consistently identified as protective factors that promote mental wellbeing and resilience (Hepsomali, 2021; Tian, 2021).

Parallel to the rising burden of mental health conditions, non-communicable diseases (NCDs) pose an equally significant global health threat. NCDs are responsible for approximately 18 million premature deaths annually among individuals under 70 years of age, with a 17.6% increase in global DALYs attributed to these conditions between 2010 and 2021 (Melaku, 2025). Cardiovascular diseases, cancers, chronic respiratory diseases, and type 2 diabetes account for nearly 80% of all premature NCD-related deaths, underscoring their dominant contribution to global morbidity and mortality. The increasing prevalence of NCDs is closely linked to modifiable lifestyle factors, including unhealthy dietary patterns, physical inactivity, tobacco use, and elevated body mass index (BMI), which are further amplified by urbanization, globalization, and socioeconomic transitions (Balwan, 2021).

Importantly, both mental disorders and NCDs share common behavioural and lifestyle determinants, making them largely preventable. Evidence suggests that adopting healthier daily habits such as engaging in regular physical activity, abstaining from tobacco, maintaining a balanced high-fibre and low-fat diet, achieving a healthy body weight, and practising effective stress management can substantially reduce the risk of cardiovascular disease, diabetes, cancer, and mental health disorders (Balwan, 2021). However, the management of NCDs often requires long-term, multi-modal medical interventions that primarily aim to control symptoms and prevent complications rather than fully reverse underlying pathophysiological processes. Given the multi-organ involvement and chronic nature of NCDs, standardised treatment protocols alone may be insufficient to address their complexity, and long-term use of drugs is known to produce adverse effects (Tegegne, 2024).

In this context, traditional, complementary, and integrative medicine (TCIM) has gained increasing attention as a complementary strategy for the prevention and management of both

mental disorders and NCDs by targeting lifestyle and behavioral determinants of health. TCIM encompasses a broad spectrum of diagnostic, preventive, and therapeutic practices that complement conventional medicine and contribute to a more holistic model of care. By addressing unmet health needs, enhancing patient-centered care, and expanding biomedical frameworks, TCIM plays an important role in contemporary healthcare systems (Najibi, 2025). The growing popularity of TCIM is partly driven by perceptions of naturalness, safety, and holistic healing, with many individuals viewing these approaches as having fewer adverse effects compared to conventional therapies (Lee, 2022).

Evidence indicates substantial global utilization of TCIM, with prevalence rates ranging from 24% to 71.3% across countries, as reported in a 2022 systematic review. This wide variation reflects increasing public confidence in TCIM as a means to improve overall health, alleviate symptoms, and enhance quality of life. Many users report that integrating TCIM approaches alongside conventional care enables better symptom control and, in some cases, reduced dependence on pharmacological treatments (Najibi, 2025). Collectively, these trends underscore the growing relevance of integrative, lifestyle-oriented approaches in addressing the intertwined global burdens of mental disorders and non-communicable diseases. Substantial fall in blood cholesterol levels in Mauritius, caused not by health promotion or drugs, but by negotiating trade agreements that enabled imported cooking oil to switch from largely palm oil (high in saturated fatty acids) to almost wholly soya bean oil (Pearce, 2015).

The World Health Organisation (WHO) defines naturopathy as part of Traditional and Complementary Medicine (T&CM) and has recommended that this sector build evidence to support its safe and effective use (Myers, 2019). The purpose of this review is to provide the role of yoga and naturopathy in the prevention and management of major lifestyle disorders and mental illness.

2. Yoga and Naturopathy Framework for Mind–Body Health

Yoga is the science of right living, developed as part of the tantric civilization that existed in India more than 10,000 years ago. The essence of Yoga is centered around the realization of oneself (Mooventhan, 2020). There are many branches of Yoga, including raja, hatha, karma, bhakti, jnana, mantra, kundalini, and laya. Sage Patanjali's treatise on Raja Yoga, known as the Yoga Sutras, codified the first definitive, unified, and comprehensive system of Yoga. Often referred to as the "eight-fold path," this system consists of the following elements: yama (self-restraints), niyama (self-observances), asana (postures), pranayama (breathing techniques), pratyahara (disassociation of consciousness from the outside environment), dharana (concentration), dhyana (meditation), and samadhi (identification with pure consciousness) (Saraswati, 2008).

Naturopathy is defined as a system of building the entire being in harmony with the constructive principle in nature across the physical, mental, moral, and spiritual planes. In a naturopathic perspective, health and disease are understood as multidimensional states, extending beyond mere physical pathology. Health is conceptualized as a state of normal and harmonious functioning of the elements and forces that constitute the human organism, reflecting balance across physical, mental, moral, and spiritual planes. This harmonious state is maintained when individuals live in accordance with natural laws, which inherently promote

growth, repair, and optimal functioning of the body. Conversely, disease is viewed as a state of disharmony or dysfunction arising from deviation from these constructive natural principles. Such deviations, often referred to as violations of natural laws, initially manifest as functional disturbances and subsequently present as physical symptoms. From this perspective, disease is not merely an isolated pathological event but a systemic expression of imbalance affecting the whole person (Lindlahr, 1919).

Yoga and naturopathy is a drugless system of medicine considered as a lifestyle medicine as it helps to treat many lifestyle disorders by encouraging the patient to adopt yoga (Kriyas, asanas, pranayama, meditation, etc.) and naturopathy (therapies based on pancha maha poothas, i.e., hydrotherapy [water], mud therapy [earth], air therapy [air], helio [sun] therapy [fire], and fasting therapy [akash] and diet therapy, color therapy, manipulative therapy and magneto therapy) based lifestyle modification. It aims at living a harmonious life by following the laws of nature (Srilakshmi, 2024).

3. Conceptual Foundations for Mind–Body Health

According to Yoga, the primary causes of physical ailments (vyadhi) stem from mental disturbances (aadhi), which are often rooted in a lack of self-awareness and control over one's senses. While sensory experiences may provide temporary pleasure, they can ultimately contribute to illness. When individuals lack control over their senses, their minds become unstable, leading to a constant craving for enjoyment from various objects. This unfulfilled desire breeds resentment, and when desires are fulfilled, they intensify, creating a cycle of anger and frustration. The interplay of lust and anger can disturb the mind and is a significant factor in many health issues (Raghuram, 2023).

Epidemiological data from the National Health Interview Survey identify Yoga as the most frequently utilized complementary health practice. Accumulating evidence demonstrates that Yoga-based interventions are associated with improved dietary behaviors, enhanced sleep quality, reduced perceived stress, and decreased engagement in harmful health behaviors, including tobacco and alcohol use (Jindal, 2021). Additionally, theoretical constructs within the Patanjali Yoga Sutras, such as attention regulation, cognitive restraint, and emotional balance, exhibit conceptual parallels with established psychological and behavioral science frameworks (Mooventhan, 2020).

Naturopathy promotes a philosophy of self-reliance, encouraging individuals to take responsibility for their own health and wellbeing. It strongly believes that the root causes of diseases stem from behaviors and attitudes. In this framework, the underlying causes of illness are often linked to stress, ignorance, indifference, lack of self-control, and excessive indulgence which is called violation of nature act as the main cause of disease, leads to either accumulation of morbid matter or depletion of essential factors, which in turn causes lowered vitality and abnormal composition of blood and lymph, which causes various disease and symptoms. Every acute disease is the result of a cleansing and healing effort of nature. Through the occurrence of acute disease, the body indicates the presence of abnormalities. Prolonged accumulation due to improper excretion or suppression of acute disease leads to chronic diseases. The body has the inbuilt power to heal itself; for that, it requires time and a suitable environment for stimulating the healing power (Lindlahr, 1919).

Yoga and naturopathy are gaining widespread recognition throughout the world because of their holistic approach in treating diseases at their root cause and by enhancing the body's inherent healing power (Srilakshmi, 2024). Globally, naturopathy is practiced in at least 98 countries with representation in every world region. Naturopathy is practiced widely in Europe (n=54 practicing countries), followed by Latin America (n=51), Africa (n=47), and the Western Pacific (n=37). Estimates from the World Naturopathic Federation suggest there are between 75,000 and 100,000 naturopaths currently in clinical practice across the world (Steel, 2022). Naturopathy practitioners provide care to patients across all life stages and diverse conditions pertinent to those life stages, while also demonstrating a multimodal approach that may consider broader health concerns and long-term treatment practices (Steel, 2022)

In summary, Yoga and Naturopathy offer a coherent scientific framework for mind–body health, emphasizing self-regulation, adaptive stress response, and physiological resilience. By modifying maladaptive behaviors and enhancing intrinsic regulatory mechanisms, these systems support the body's capacity for self-repair and functional restoration, thereby contributing to both disease prevention and holistic health maintenance.

4. Evidence Landscape

Yoga and Naturopathy for Happiness Index (Health, wellbeing and wellness, rejuvenation and longevity)

Beyond disease prevention and clinical management, Yoga and Naturopathy contribute substantially to subjective wellbeing and happiness, which are increasingly recognized as important indicators within population health and wellness frameworks.

The World Health Organization (WHO) defines health as a state of being rather than just an outcome, highlighting the importance of regular health care. A yogic lifestyle, as mentioned in the Bhagavad Gita, can help achieve this state. This lifestyle includes: Ahar: 1) A healthy and moderate diet, 2) Achar: Physical activities and cleansing techniques (kriyas), 3) Vihar: Relaxation and recreational activities, 4) Vichar: A positive attitude. In addition, Yoga not only promotes physical, mental, emotional, and spiritual wellbeing but also is safe, affordable, and accessible to everyone, including the elderly and disabled (Gupta., 2024).

Evidence supports the role of yoga in enhancing psychological wellbeing and happiness. A 4-week yoga intervention consisting of 60-minute sessions conducted three times per week demonstrated significant improvements in psychological wellbeing and perceived happiness, underscoring yoga's effectiveness as a non-pharmacological strategy for improving emotional health and overall life satisfaction (Eroğlu, 2025). The positive effects of yoga on happiness are mediated through multiple interconnected psychophysiological mechanisms. The integrated practice of physical postures (āsana), regulated breathing (prāṇāyāma), and relaxation techniques stimulates the release of endorphins, neurotransmitters associated with positive affect and pleasure. Yoga practice has also been shown to enhance serotonergic activity, which plays a critical role in mood stabilization and emotional regulation.

Beyond its neurochemical effects, yoga fosters psychological resilience by cultivating mindfulness, adaptability, and mental strength. Through sustained engagement in mindful movement, challenging postures, and meditative awareness, individuals develop an enhanced

capacity to manage stressors with composure and confidence. This process reinforces a durable sense of inner wellbeing, self-efficacy, and emotional balance, thereby contributing to long-term mental health and overall wellness (Chen Q., 2024).

Naturopathic health prescriptions primarily emphasize the promotion of healthy behaviors and lifestyle modification. Central to naturopathic practice is the identification and correction of underlying causes of disease rather than symptom suppression. Accordingly, individualized counselling and structured health education form the cornerstone of naturopathic care, facilitating sustainable behavioral change at the individual level (Salwa, 2020).

Several naturopathic modalities exert direct psychophysiological effects that support wellbeing and healthy ageing. Cold water therapy, a widely used hydrotherapy intervention, has demonstrated the potential to confer a broad range of health benefits. Evidence suggests that cold water exposure favorably influences cardiometabolic risk factors by stimulating brown adipose tissue activation and increasing energy expenditure, thereby potentially reducing the risk of cardiometabolic disorders. Additionally, cold water therapy induces the release of hormones, catecholamines, and endorphins, leading to improved alertness, enhanced mood, and better mental wellbeing. These adaptive responses may contribute to the promotion of healthy aging and extension of health span (Kunutsor, 2025). Similarly, sauna therapy, mud baths, and thermal water applications have been shown to elevate circulating beta-endorphin levels through the transmission of heat to body tissues, further supporting relaxation, stress reduction, and overall wellness (Bender, 2007).

Yoga and Naturopathy for Mental Wellbeing

As the prevalence of stress continues to rise globally, the need for effective and sustainable stress-reduction strategies has become increasingly evident. Stress, although a physiological response to perceived environmental threats, is associated with significant adverse health outcomes when excessive or prolonged, including increased morbidity and mortality. Consequently, interventions that modulate stress responses and enhance psychological resilience are of growing importance in public health (Smith & Wesselbaum, 2025).

Two weeks of integrated yoga and naturopathic intervention reduced stress, anxiety, and depression in COVID-19 positive patients (Kavitha et al, 2022). Yoga encompasses a broad spectrum of practices, ranging from gentle, meditative, and restorative forms to more physically demanding styles. These practices can be individualized by modifying intensity, duration, and technique to accommodate diverse populations and health conditions. A well-documented benefit of yoga is its capacity to reduce circulating levels of cortisol, a key biomarker of stress (Schleinzer, 2024). Central to yogic practice are controlled breathing techniques (prāṇāyāma), which enhance oxygen delivery, promote muscle relaxation, and facilitate the release of somatic tension (Ross, 2010). Increasing evidence also supports the role of yoga in managing both physical and psychological stress in high-demand occupational settings. In healthcare professionals, yoga-based mind–body interventions have been shown to significantly reduce perceived stress and mitigate burnout, highlighting their relevance in occupational mental health promotion (Cocchiara, 2019).

Beyond stress reduction, yoga has demonstrated therapeutic potential across a spectrum of mental health disorders. A 2024 systematic review and meta-analysis by Moosburner et al.,

encompassing 22 randomized controlled trials (RCTs) with 1,105 participants diagnosed with depressive disorders, reported significant reductions in depression severity among individuals practicing yoga (Moosburner, 2024). Yoga is widely regarded as a safe, low-risk adjunctive therapy for depression, with favorable acceptability and minimal adverse effects (Cramer, 2013). Similarly, a systematic review and meta-analysis by Cramer et al. (2018), analyzing eight RCTs involving 319 participants, found small but significant short-term reductions in anxiety symptoms associated with yoga practice (Cramer, 2018).

Evidence regarding yoga's role in severe mental illnesses is also emerging. Bipolar disorder (BD), characterized by recurrent episodes of depression and mania, has been explored in limited studies. Yoga, along with antidepressants reported to reduce depressive symptoms in patients with Major Depressive Disorder (MDD) by alleviating stress, regulating autonomic balance, neurotransmitters, hypothalamic-pituitary-adrenal (HPA) axis, the peripheral nervous system, including limbic system activity, and inflammatory and endocrine responses (Padmavathi et al., 2023). A systematic review found that yoga interventions significantly reduced the severity of obsessive-compulsive disorder (OCD) symptoms, as assessed by standardized tools like the Yale-Brown Obsessive-Compulsive Scale (Y-BOCS). Different styles of yoga, such as Kundalini and Rajyoga, were linked to improved mental health outcomes, lower anxiety levels, and an overall enhancement in wellbeing (Yadhav et al., 2025).

A 2022 systematic review by Jean et al., which included five studies, reported mixed but generally positive findings, with yoga being well tolerated and associated with improvements in quality of life, emotional regulation, and mood stabilization in some participants, potentially mediated through enhanced self-awareness and calmness (Jean, 2022). In schizophrenia, stronger evidence exists. A 2024 systematic review and meta-analysis by Yin et al., including 19 RCTs with 1,274 patients, demonstrated that yoga significantly reduced both positive and negative symptoms, while also improving quality of life and social functioning. These benefits were consistent across short- and longer-term follow-ups, indicating yoga's potential role as an adjunctive intervention in schizophrenia management (Yin, 2024).

Complementing yoga-based interventions, naturopathic therapies also show promise in mental health care. A randomized controlled trial by Cooley et al. (2009) demonstrated that whole-system naturopathic care significantly reduced anxiety symptoms over a 12-week period, suggesting its utility as a safe and effective alternative or adjunctive approach for workplace anxiety management, with potential implications for reducing healthcare costs. Hydrotherapy interventions further contribute to mental wellbeing. Short-duration whirlpool immersion has been shown to increase peripheral temperature and induce parasympathetic activation, accompanied by enhanced feelings of wellbeing and reduced state anxiety.

Cold water therapy, in particular, has been proposed to exert antidepressant and anxiolytic effects through neurophysiological mechanisms. Cold exposure activates the parasympathetic nervous system and may induce stress-induced analgesia. Adapted cold showers have been hypothesized to exert effects comparable to mild electroconvulsive stimuli by generating intense sensory input to the cerebral cortex, potentially modulating mesolimbic neurotransmission implicated in mood and psychotic disorders. The antidepressant effects of cold showers have been attributed to the high density of cold receptors in the skin, which transmit a large volume of afferent impulses to the brain, thereby influencing mood-regulating pathways (Mooventhan, 2014).

Emerging evidence also highlights the role of gut–brain interactions in mental health. Given the significant comorbidity between severe mental illnesses, such as schizophrenia, and gastrointestinal disorders, interventions targeting gut health may influence psychological outcomes. Colon cleansing, traditionally employed in naturopathy, has been associated with improvements in mental health parameters. A 2024 prospective cohort study reported statistically significant reductions in PHQ-9 and Hospital Anxiety and Depression Scale (HADS) depression scores one month following bowel preparation (McGuinness, 2024). These findings support the hypothesis that modulation of intestinal health may positively impact mental state, particularly in populations with coexisting gastrointestinal and psychiatric conditions (Mooventhan, 2014).

According to a systematic review by Rapaport (2018), massage therapy shows substantial benefits for individuals with generalized anxiety disorder (GAD) and major depressive disorder. This conclusion arises from various randomized controlled trials and systematic reviews, which highlight notable decreases in symptoms of anxiety and depression following massage interventions (Rapaport 2018).

In parallel, plant-based dietary patterns have been increasingly associated with improved mental health outcomes, particularly reductions in symptoms of depression and anxiety. Evidence from systematic reviews and clinical trials suggests that whole-food, plant-based diets characterized by high intakes of dietary fiber, antioxidants, and omega-3 fatty acids may support brain function and gut–brain axis regulation, thereby contributing to psychological wellbeing (Lee, 2025).

Role of Yoga and Naturopathy in the Management of Lifestyle-Related Disorders

Robust evidence from high-level evidence syntheses supports the effectiveness of yoga and naturopathy in the prevention and management of chronic metabolic and lifestyle-related conditions. A comprehensive umbrella review published in 2025 synthesized findings from 51 systematic reviews, including 34 meta-analyses, encompassing 579 randomized controlled trials (RCTs) with a total of 28,403 adult participants. The review demonstrated that yoga interventions significantly reduce blood pressure, improve glycemic control, and lower body mass index (BMI) and body fat percentage in individuals with metabolic disorders compared with control groups. Importantly, these benefits were sustained for up to six months following intervention. In addition to metabolic outcomes, yoga was associated with improvements in key cardiovascular risk factors, reductions in inflammatory biomarkers such as C-reactive protein (CRP) and interleukin-6 (IL-6), and enhanced health-related quality of life across more than 12 chronic disease outcomes, underscoring yoga’s broad therapeutic relevance (Wang, 2025).

Complementary evidence supports the role of whole-system naturopathic medicine in chronic disease management. A 2019 systematic scoping review by Myers and Vigar analyzed 33 studies involving 9,859 patients across multiple countries, including the United States, Canada, Germany, India, Australia, the United Kingdom, and Japan. The review identified positive clinical evidence for naturopathic medicine delivered through pragmatic, multimodal interventions, such as individualized nutrition therapy, hydrotherapy, lifestyle counseling, and mind–body approaches. Naturopathic care demonstrated effectiveness in managing a wide range of chronic conditions, including cardiovascular disease (notably blood pressure control), musculoskeletal pain, type 2 diabetes mellitus (with significant reductions in HbA1c),

polycystic ovary syndrome, and common mental health disorders such as depression and anxiety. Across these conditions, improvements in quality of life were frequently observed alongside favorable changes in clinical and biochemical markers (Myers, 2019). The 2024 narrative review affirms naturopathy's relevance in modern healthcare through drugless healing modalities that improve outcomes across cardiac health, skin diseases, cancers, immunity, and metabolic syndrome. It synthesizes evidence showing consistent positive effects from lifestyle modifications, detoxification, hydrotherapy, and yoga-naturopathy protocols (Dewangan, 2024)

Metabolic Health

Evidence from randomized controlled trials supports the role of integrative yoga and naturopathy in improving metabolic health and associated cardiovascular risk factors. A randomized controlled trial involving 76 patients with metabolic syndrome demonstrated that combined naturopathy and yoga interventions significantly improved metabolic parameters, reduced cardiovascular risk, and enhanced vitality, supporting their use as adjunctive therapies in metabolic syndrome management (Shishira, 2025).

Similarly, a larger randomized controlled trial evaluated the effects of a 10-day yoga and naturopathy intervention on inflammatory markers in 262 obese adults. Compared with controls, participants receiving the intervention exhibited significant reductions in inflammatory indices, indicating effective modulation of obesity-associated low-grade inflammation (Shetty, 2024). In another study reported a significant reduction in weight, body mass index, hip circumference, waist circumference, waist-hip ratio, mid-arm circumference, mid-thigh circumference, blood pressure, pulse rate, mean arterial pressure, rate pressure product, double product, fasting blood glucose, total cholesterol, and perceived stress scale score after yoga and naturopathy intervention in patients with obesity (Mooventhan et al, 2025). A study by Ganesh Iyyer et al., (2021) yoga and naturopathy intervention including liquid fasting in addition to using lime juice with jaggery, ash guard juice, vegetable soup, buttermilk, and kokum juice for a period of 5 consecutive days showed a significant reduction in body weight, BMI, fat mass, triglycerides (TG), total cholesterol (TC), low-density lipoprotein cholesterol (LDL-C), very-low-density lipoprotein cholesterol (VLDL-C), high-density lipoprotein cholesterol (HDL-C), systolic blood pressure (SBP), and diastolic blood pressure (DBP) in people with obesity, hence LF during yoga and naturopathy intervention is effective in reducing metabolic and cardiovascular risk factors in people with obesity.

Further evidence is provided by a two-arm, parallel-group randomized controlled trial conducted by Shetty et al. (2025) involving 262 patients with hypertension. The study demonstrated that a 10-day integrated yoga and naturopathy lifestyle intervention, comprising yoga practices, dietary counseling, hydrotherapy, and stress management, resulted in significant improvements in lipid profiles compared with standard care. Immediate post-intervention effects included marked reductions in total cholesterol, triglycerides, LDL-C, VLDL-C, apolipoprotein B, and lipoprotein(a). Importantly, sustained benefits were observed at 9-month follow-up, with significant improvements in apolipoprotein A, apolipoprotein B, and lipoprotein(a), highlighting the intervention's potential for long-term dyslipidemia management in hypertensive populations.

A study by Mooventhan et al. (2024) reported a significant reduction in fasting blood glucose, post-prandial blood glucose, weight, body mass index, hip circumference, waist circumference,

waist-hip ratio, mid-arm circumference, mid-thigh circumference, perceived stress scale score, blood pressure, pulse rate, mean arterial pressure, rate pressure product, and double pressure product after yoga and naturopathy intervention in patients with Type 2 diabetes mellitus.

A systematic review has indicated that yoga interventions regularly result in favourable outcomes, such as reductions in body mass index (BMI), waist circumference, and body fat percentage. These physical changes correlate with significant enhancements in various cardiovascular health indicators, including blood pressure, cholesterol levels, and functions of the endothelial and autonomic systems. Furthermore, yoga is effective in promoting stress management and enhancing psychological wellbeing, effectively addressing both the mental and physical components of obesity. The advantages of yoga extend beyond weight loss, influencing systemic inflammation and metabolic health factors critical for reducing the risk of cardiovascular disease (Inbaraj G et al., 2025).

Beyond metabolic parameters, yoga interventions have also demonstrated neurocognitive benefits in metabolic disease. A randomized study involving 50 patients with type 2 diabetes mellitus assessed the effects of a 12-week integrated yoga program on cognitive function. Participants in the yoga group showed significant improvements in working memory accuracy and reaction time, particularly under high cognitive load. These cognitive gains were accompanied by increased oxygenation in the dorsolateral and ventrolateral prefrontal cortex, which correlated positively with performance, suggesting enhanced prefrontal cortical functioning and a potential protective role against diabetes-related cognitive decline (Kaligal, 2023).

Hydrotherapy contributes to metabolic health through temperature-dependent physiological mechanisms that influence circulation, neuroendocrine regulation, and metabolic rate. Warm water immersion (32–38 °C) has been shown to reduce systolic and diastolic blood pressure by 11–12%, decrease plasma renin activity by 46%, lower cortisol levels by 34%, and suppress aldosterone, while significantly increasing diuresis (107%), collectively improving cardiovascular risk factors. In contrast, cold water immersion (14–20 °C) markedly increases metabolic rate (93–350%), elevates catecholamine levels, particularly noradrenaline (+530%) and activates brown adipose tissue, thereby enhancing insulin sensitivity and lipid metabolism (Mooventhan, 2014).

Complementing these findings, a systematic review by Ortiz et al. (2023) analyzed 20 randomized controlled trials encompassing 4,247 participants to assess the effects of Kneipp hydrotherapy, primarily cold-water applications. The review reported significant positive outcomes in 46 of 132 comparisons, particularly in conditions related to chronic venous insufficiency, menopausal symptoms, childhood fever, cognitive and emotional function, and reduced sickness absenteeism, further supporting the therapeutic relevance of hydrotherapy in integrative metabolic and systemic health management.

Neurological Disorders

Emerging evidence suggests that integrative approaches combining yoga and naturopathy may contribute meaningfully to functional recovery and symptom management across a range of neurological disorders. A case-based clinical investigation by Mishra et al. (2024) documented functional and cognitive recovery in a poststroke survivor following a 90-day individualized

yoga and naturopathy intervention. The therapeutic protocol included daily neutral arm baths, partial massage therapy, yoga asanas, pranayama, and naturopathic dietary modifications. The patient demonstrated notable improvements in both functional independence and cognitive performance, highlighting the rehabilitative potential of integrative non-pharmacological interventions in poststroke care (Mishra, 2024).

Yoga has been increasingly recognized as a promising, affordable, and accessible adjunct therapy for neurological disorders. A review suggested that yoga was effective as an adjuvant for patients with various neurological disorders, including stroke, Parkinson's, disease, multiple sclerosis, epilepsy, Alzheimer's disease, dementia, headache, myelopathy, and neuropathies (Mooventhan & Nivethitha, 2017). Evidence from multiple studies indicates that regular yoga practice improves motor and cognitive functions, mood, and overall quality of life in affected individuals. At the molecular level, yoga has been shown to upregulate neurotrophic factors such as brain-derived neurotrophic factor (BDNF), reduce pro-inflammatory cytokines including interleukin-6 and tumor necrosis factor- α , attenuate oxidative stress, and potentially preserve gray matter volume in key brain regions. Collectively, these mechanisms support the hypothesis that yoga induces favorable neuroplastic adaptations that may slow neurodegenerative processes (Zoila, 2025).

In neurodegenerative disorders, a randomized controlled trial evaluating the biopsychosocial effects of yoga in individuals with Parkinson's disease demonstrated significant improvements in mental and emotional health outcomes. Participants receiving the yoga intervention exhibited marked reductions in anxiety, improvements in motor function, and enhanced health-related quality of life. Notably, increased mindfulness, particularly within the "describing" facet, was accompanied by a significant reduction in serum interleukin-6 levels, indicating attenuation of systemic inflammation. These findings underscore the value of yoga as a complementary therapy targeting both psychological and inflammatory dimensions of Parkinson's disease (Kwok, 2025).

A meta-analysis of five RCTs involving 356 patients with migraine reported that yoga therapy was associated with substantially reduced headache frequency compared to the control intervention (Wu et al 2022). Yoga-based interventions have also shown efficacy in chronic migraine, a disabling neurological condition commonly associated with autonomic nervous system dysregulation. In a randomized controlled trial, a 12-week pranayama and relaxation program resulted in significant reductions in headache frequency and migraine-related disability, alongside improvements in quality of life. Autonomic assessments revealed enhanced parasympathetic activity, reflected by reductions in resting blood pressure and heart rate. These outcomes support the integration of yogic breathing and relaxation practices as effective adjuncts within multidisciplinary management strategies for chronic migraine (Sujan, 2025).

A systematic review by Rodrigues et al. (2025) reported significant improvements in gait control, balance, and mobility among older adults with neurological impairments following aquatic-based interventions. The buoyancy and resistance properties of water were found to facilitate motor re-education and enhance confidence in movement. Additionally, a 2019 systematic review and meta-analysis concluded that manual massage therapy is effective in reducing agitation and depressive symptoms in individuals living with dementia, supporting its role in symptom modulation and emotional wellbeing (Margenfeld, 2019). The diet rich in

neuroprotective nutrients, i.e., antioxidants, B vitamins, and polyunsaturated fatty acids, such as the Mediterranean diet, the DASH (Dietary Approaches to Stop Hypertension) diet, and the MIND (Mediterranean-DASH Intervention for Neurodegenerative Delay) diet, Alternative Healthy Eating Index (AHEI), vegan/vegetarian, and ketogenic diet has a beneficial effect on the risk of developing Alzheimer's disease (Stefaniak et al 2022) and Parkinson's Disease (Tosefsky et al., 2024). In US adults, higher olive oil intake was associated with a lower risk of dementia-related mortality, irrespective of diet quality. Beyond heart health, the findings extend the current dietary recommendations of choosing olive oil and other vegetable oils for cognitive-related health (Tessier et al, 2024). Ketogenic diet, DASH, A low-fat vegan diet mixed with an elimination diet, reduced attack duration, frequency, and severity, and medication intake in patients with migraine (Nguyen et al., 2024).

Cardiovascular Disorders

Growing evidence supports yoga and naturopathy as a complementary strategy for cardiovascular and vascular disease management, particularly in patients seeking non-surgical or adjunctive approaches.

A clinical case report described the application of yoga and naturopathy in a 75-year-old man with severe triple-vessel coronary artery disease who declined surgical intervention. Following 16 weeks of yoga and naturopathy therapy administered alongside conventional pharmacological management, the patient demonstrated a marked improvement in cardiac function, with left ventricular ejection fraction increasing from 35% to 48% at 6-month follow-up. This case highlights the potential of integrative lifestyle interventions to support cardiac function in high-risk patients unwilling or unable to undergo invasive procedures (Mangaiarkarasi et al, 2020).

In vascular disease, a prospective randomized controlled trial conducted by Chauhan et al. (2023) evaluated the effects of yoga and naturopathy interventions in patients with uncomplicated varicose vein disease. After one month of intervention, the treatment group showed significant reductions in inflammatory markers, including high-sensitivity C-reactive protein and homocysteine, as well as improvements in systolic and diastolic blood pressure, heart rate, body weight, and body mass index. Clinically meaningful improvements were also observed in Aberdeen Varicose Vein Questionnaire scores and Varicose Vein Severity scores compared with controls. The intervention, which included yoga asanas, pranayama, meditation, hydrotherapy, and dietary modifications, was well tolerated with no reported adverse events, suggesting enhanced endothelial function and symptom relief through yoga and naturopathy integration (Chauhan, 2023).

At the vascular mechanistic level, yoga has been shown to significantly improve endothelial function, as assessed by flow-mediated dilation (FMD). A meta-analysis by Patil et al. (2024) reported a pooled mean difference of 1.48% in FMD favoring yoga interventions over control conditions across randomized controlled trials. The improvement in endothelial function appears to be mediated through multiple interrelated mechanisms, including reductions in sympathetic nervous system activity and cortisol levels, attenuation of oxidative stress and inflammation, and increased nitric oxide bioavailability. Furthermore, yoga practices enhance shear stress on vascular endothelium, upregulate endothelial nitric oxide synthase expression,

and reduce pro-inflammatory cytokines such as tumor necrosis factor- α and interleukin-6, thereby mitigating atherogenic processes and restoring endothelial integrity (Patil, 2024).

Autonomic regulation is another key pathway through which yoga exerts cardiovascular benefits. A randomized controlled trial conducted in a tertiary care setting evaluated 80 post-myocardial infarction patients participating in a 12-week yoga-based cardiac rehabilitation program. Compared with enhanced standard care alone, adjunctive yoga significantly improved baroreflex sensitivity and increased total and low-frequency systolic blood pressure variability at follow-up. In contrast, patients receiving standard care alone exhibited a decline in autonomic parameters, indicating that yoga-based rehabilitation provides additive autonomic benefits when combined with optimal medical therapy (Christa, 2023).

Thermal and manual therapies commonly used in naturopathic care further contribute to cardiovascular health. Heat therapy, including hot water immersion and sauna use, has been shown to improve vascular function. A review by Brunt (2021) reported that 8–10 weeks of hot water immersion (3–5 sessions per week, raising core body temperature to approximately 38.5 °C) resulted in 50–100% increases in brachial artery flow-mediated dilation, reductions in carotid–femoral pulse wave velocity, and decreases in systolic blood pressure by 5–10 mmHg across young sedentary adults and older populations (Brunt, 2021).

Similarly, a scoping review by Nelson et al. (2015) demonstrated that massage therapy may lower blood pressure through parasympathetic activation, reduced sympathetic tone, and enhanced vasodilation induced by mechanical tissue pressure. Proposed mechanisms include decreased cortisol levels, improved baroreflex sensitivity, and endothelial function enhancement mediated by shear stress (Nelson, 2015).

Dietary modification remains a cornerstone of cardiovascular prevention. A well-balanced plant-based diet has been shown to exert beneficial effects on body mass index, hyperlipidemia, and type 2 diabetes, and is consistently associated with reduced cardiovascular disease risk. These effects are attributed to high dietary fiber content that lowers low-density lipoprotein cholesterol, antioxidant-rich components that protect capillary walls, polyunsaturated fatty acids with anti-inflammatory properties, improvements in insulin sensitivity and glucose homeostasis, and favorable modulation of the gut microbiota, collectively supporting cardiovascular health (Jangid, 2025).

Oncology and Treatment-Related Complications

Integrative approaches incorporating yoga, naturopathy, and lifestyle modification have demonstrated potential benefits as adjuncts to conventional cancer therapies, particularly in improving psychosocial outcomes, symptom burden, and treatment-related complications.

A randomized controlled trial involving 116 adult patients with stage II and III adenocarcinoma of the colon evaluated yoga and naturopathy as adjuncts to standard chemotherapy. The intervention group showed significant improvements in psychological outcomes, including reductions in anxiety, depression, and overall symptom severity, compared with patients receiving chemotherapy alone. Quality of life, assessed using the Functional Living Index: Cancer (FLIC), improved notably, with male participants deriving greater benefit than female

participants. Additionally, hemoglobin levels increased in the intervention group, suggesting improved treatment tolerance and supportive effects during chemotherapy (Raghunath, 2020).

Evidence from case-based clinical research further supports the role of integrative therapy in symptom management. Deepa et al. (2022) reported on a postmenopausal breast cancer patient who underwent a structured naturopathy and yoga intervention. The patient experienced significant reductions in pain intensity, stress, and depression scores, along with marked improvements in sleep quality as measured by validated assessment tools, indicating the effectiveness of this approach as an adjunct therapy for managing cancer-related symptoms.

At the evidence-synthesis level, an umbrella review aggregating findings from multiple systematic reviews and meta-analyses demonstrated that yoga interventions consistently yield favorable outcomes for cancer patients, particularly in enhancing psychosocial wellbeing and overall quality of life (Giridharan, 2024). Complementing these findings, a 2024 systematic review and meta-analysis focusing on breast cancer patients showed that yoga significantly reduced cancer-related fatigue compared with control interventions. Additional benefits included improved sleep quality, reduced negative emotional states such as anxiety and depression, and enhanced overall quality of life (Hou L., 2024). A systematic review of five studies with 129 prostate cancer survivors found that yoga can improve erectile function, reduce fatigue and urinary symptoms, alleviate psychological stress, boost immune function, and enhance overall quality of life (Boopalan et al., 2024).

Beyond psychosocial outcomes, yoga has shown promise in mitigating treatment-related physiological complications. Chemotherapy-induced cardiotoxicity, especially associated with anthracycline-based regimens, remains a major concern in breast cancer management. In a randomized study involving patients with stage I–III breast cancer, adjunctive yoga therapy resulted in a lower resting heart rate, preservation of parasympathetic activity, reduced sympathetic dominance, and improved sympathovagal balance following chemotherapy. These findings suggest a cardioprotective role for yoga in attenuating chemotherapy-related autonomic dysfunction (Inbaraj, 2023).

Supportive physical therapies also play an important role in managing cancer-related complications. Manual lymphatic drainage (MLD), a specialized skin massage technique designed to enhance lymph flow and reabsorption without increasing capillary filtration, has been shown to significantly reduce lymphedema, particularly in patients younger than 60 years of age (Liang, 2020). In addition, a 2022 systematic review examining hydrotherapy interventions in cancer populations reported improvements in quality of life, reductions in lymphedema, neck and shoulder pain, fatigue, and body mass index, although heterogeneity across studies led to variable effects on vital parameters, anxiety, and pain outcomes (Reger, 2022).

Dietary interventions further contribute to long-term cancer survivorship outcomes. A comprehensive review analyzing seven meta-analyses and 23 prospective cohort studies published between 2015 and 2021 found that higher intake of plant-based foods was associated with improved prognosis among cancer survivors. Specifically, increased consumption of whole grains and dietary fiber was linked to better colorectal cancer survival; higher intakes of fruits, vegetables, and fiber, along with moderate soy or isoflavone consumption, were associated with

improved breast cancer outcomes; and greater vegetable fat intake correlated with improved prognosis in prostate cancer survivors. Collectively, these findings suggest that postdiagnosis adherence to plant-based dietary patterns may confer meaningful prognostic benefits in cancer survivorship (Hardt, 2022).

Musculoskeletal and Inflammatory Disorders

Non-pharmacological and integrative therapies have demonstrated growing relevance in the management of musculoskeletal and inflammatory disorders, offering symptom relief and functional improvement alongside conventional care.

A meta-analysis evaluating the efficacy of mud-bath therapy in patients with knee osteoarthritis reported consistent clinical benefits, including significant reductions in pain intensity and meaningful improvements in physical function. Pooled analyses across multiple trials support mud-bath therapy as an effective non-pharmacological intervention for osteoarthritis management (Mennuni, 2021).

Rheumatoid arthritis (RA), a chronic inflammatory autoimmune disease, has been extensively studied in relation to yoga-based interventions. A systematic review and meta-analysis encompassing ten trials with 840 patients aged 30–70 years found that yoga significantly improved physical function, disease activity, and grip strength in individuals with RA (Ye X., 2020). Mechanistically, yoga modulates RA through integrated neuroendocrine–immune and psychophysiological pathways. Pranayama-induced slow breathing enhances vagal tone, increasing heart rate variability and acetylcholine release, which suppresses pro-inflammatory cytokines such as TNF- α , IL-6, and IL-1 β via the cholinergic anti-inflammatory pathway. Additionally, regulation of the hypothalamic–pituitary–adrenal axis reduces cortisol dysregulation and sympathetic overactivity, thereby lowering oxidative stress and rheumatoid factor levels while promoting endorphin and γ -aminobutyric acid release for analgesia. At the cellular level, yoga downregulates NF- κ B signaling, promotes autophagy in synovial cells, and improves gut microbiome diversity, collectively attenuating autoimmune-mediated joint inflammation (Mooventhan, 2023).

Supporting these findings, a randomized controlled trial investigating yoga in patients with active RA demonstrated significant improvements in mitochondrial health, including increased mitochondrial DNA copy number, enhanced mitochondrial activity and membrane potential, and upregulation of genes associated with mitochondrial integrity (AMPK, TIMP-1, KLOTHO, SIRT-1, and TFAM). Yoga practice also optimized oxidative stress markers and circadian rhythm regulation. Clinically, these molecular adaptations translated into significant reductions in disease activity (DAS28-ESR) and disability (HAQ-DI), reinforcing yoga's role as a valuable adjunct in RA management (Gautam, 2021).

Beyond inflammatory arthritis, yoga has also shown benefits in functional gastrointestinal disorders. A 2025 systematic review reported that yoga interventions led to significant improvements in gastrointestinal symptoms, reductions in anxiety and depression, and enhanced quality of life in patients with irritable bowel syndrome, a condition affecting approximately 5–10% of the global population. Compared with usual care or wait-list controls, yoga favorably influenced both physical and psychological dimensions of the disorder (Pavan, 2025).

Adjunctive manual therapies further contribute to symptom management in musculoskeletal and inflammatory conditions. Clinical evidence indicates that massage modalities, including Swedish massage, aromatherapy massage, and foot reflexology, can reduce pain, improve joint function, and modulate inflammatory markers such as interleukin-6 and tumor necrosis factor- α , as well as cortisol levels. These effects support improved neuroendocrine balance, enhanced lymphatic drainage, and better psychological wellbeing (Khojakulova, 2025).

Hydrotherapy represents another effective supportive intervention in inflammatory joint disease. A systematic review by Al-Qubaeissy (2013) synthesizing evidence from controlled clinical studies concluded that hydrotherapy, particularly warm-water exercise, significantly improves pain, joint mobility, muscle strength, functional capacity, and patient-reported quality of life in individuals with rheumatoid arthritis. The buoyancy and thermal properties of water reduce joint loading, promote muscle relaxation, and enhance circulation, making hydrotherapy a safe and well-tolerated adjunct to conventional RA treatment, especially for patients with pain-related movement limitations Al-Qubaeissy 2013).

Pediatric, Women's Health, and Neonatal Care

Short-term integrated yoga and naturopathy interventions reduced body mass index, testosterone, lipid profile, malonaldehyde (MDA), anxiety, and depression, and improved total antioxidant capacity (TAC) in Obese Adults with Polycystic Ovarian Syndrome, and thus suggested to be effective in modifying the disease progression of PCOS through endocrinological and metabolic balance (Shetty et al, 2024).

A systematic review examining the effects of yoga on quality of life in women with primary dysmenorrhea found that yoga-based interventions were generally associated with reductions in menstrual pain and improvements in physical functioning, emotional wellbeing, and overall quality of life. Across the included studies, yoga practices typically incorporating postures, breathing techniques, and relaxation were reported to reduce symptom severity and decrease reliance on analgesic medication, although variability in study quality and intervention protocols was noted (McGovern, 2018).

Similarly, a 2024 systematic review and meta-analysis of 32 randomized controlled trials involving 3,979 pregnant women evaluated relaxation-based interventions, including yoga, progressive muscle relaxation, breathing exercises, and mindfulness. The analysis demonstrated significant reductions in maternal anxiety and depressive symptoms, alongside increases in newborn birth weight. Additional benefits included shorter labor duration and higher rates of spontaneous vaginal births in two trials, as well as improvements in physiological parameters such as blood pressure (Abera, 2024). A meta-analysis of eight studies involving 576 pregnant women aged 14 to 40 years demonstrated that yoga effectively reduced labor pain (Boopalan et al., 2023).

Yoga has also been explored in the context of infertility and pregnancy-related challenges. A systematic review synthesizing evidence from randomized controlled trials and observational studies reported that yoga interventions significantly reduced stress and anxiety while supporting pregnancy outcomes. Proposed mechanisms included improved cortisol regulation and enhanced psychological resilience (Demir Yıldırım, 2022).

In oncological women's health, a systematic review evaluating yoga interventions in women with gynecological cancers reported consistent benefits across multiple health domains. Yoga-based programs were associated with significant improvements in quality of life, reductions in cancer-related fatigue, anxiety, depression, and stress, as well as enhanced sleep quality and emotional wellbeing compared with usual care or supportive interventions. Some studies additionally noted favorable effects on physical functioning and symptom burden during and after cancer treatment (Giridharan, 2025).

In neonatal care, a randomized controlled trial investigated the effects of hydrotherapy and tactile–kinesthetic stimulation on weight gain in preterm infants admitted to neonatal intensive care units. Although tactile–kinesthetic stimulation produced variable outcomes, hydrotherapy was associated with a significant increase in daily weight gain beginning from the second day of intervention, highlighting its effectiveness as a supportive therapeutic modality for preterm infant care (Dos Anjos, 2022).

In obstetric settings, evidence supports the use of hydrotherapy during labor. A systematic review and meta-analysis evaluating immersion in water during the first stage of labor demonstrated significant reductions in labor pain intensity. They decreased reliance on pharmacological analgesia when compared with standard care. The analysis also reported improvements in maternal comfort and satisfaction, with no observed increase in adverse maternal or neonatal outcomes (Ergin, 2024).

Complementary interventions during childbirth have also been shown to improve maternal pelvic health. A randomized controlled trial assessed the impact of perineal massage combined with warm compresses during the second stage of labor on pelvic floor outcomes. The intervention group exhibited higher rates of intact perineum and lower-severity vaginal tears, as well as a reduced prevalence of early postpartum pelvic floor dysfunction, particularly urinary symptoms, at both 3 and 6 months postpartum. These findings support the role of naturopathy-based supportive interventions in enhancing maternal outcomes (Rodrigues, 2024).

Yoga and Naturopathy integrative practices

Non-communicable diseases (NCDs) represent a substantial threat to global health, with projections indicating that they will account for 75% of total mortality by the year 2030. Major risk factors contributing to the prevalence of NCDs include alcohol consumption, tobacco use, poor dietary choices, and physical inactivity. Thus, implementing lifestyle and behavioral modifications is imperative. While the healthcare system encounters several challenges in addressing these issues, the practices of yoga and naturopathy offer a cost-effective and holistic strategy for enhancing overall health outcomes (Gupta, 2024; Salwa & Nair, 2020).

Integrative medicine seeks to minimize reliance on pharmaceutical interventions, which may disrupt metabolic and enzymatic functions and potentially induce additional health complications. This approach encourages the synthesis of different medical systems (e.g., combining allopathy with various Ayush practices) based on a patient's specific health condition and personal preferences. The aim is to achieve improved clinical outcomes, characterized by expedited recovery times and effective management with reduced adverse effects (Srilakshmi et al., 2024). The integration of Ayush particularly, yoga and naturopathy is essential for addressing India's multifaceted health challenges, including NCDs, communicable diseases, inadequate maternal

and child health outcomes, and an aging demographic. The National Health Policy of 2017 endorses this integrative approach through the principle of “Pluralism,” aligning with the World Health Organization’s (WHO) Sustainable Development Goal (SDG) 3 and global initiatives in traditional medicine. Essential measures include the adoption of integrative care models, standardization of treatment protocols, training of healthcare practitioners, and advancement of research initiatives (Saxena et al., 2024).

International organizations, such as the WHO, have recognized the importance of research in integrative and traditional medicine, resulting in the establishment of the WHO Global Centre for Traditional Medicine in India. By harmonizing traditional knowledge with modern research methodologies, the incorporation of yoga and naturopathy into conventional healthcare can be strengthened, transforming it into a scientifically validated, widely accessible resource for improving mental, physical, and immune health (Dhanasekar & Mathangi, 2025).

The Government of India actively promotes yoga and naturopathy through the National Ayush Mission (2014) and emphasizes wellness within the 2017 National Health Policy by establishing Health and Wellness Centres. The integration of yoga and naturopathy into Primary Health Centres (PHCs) can be realized with minimal equipment and qualified medical personnel. A systematic approach to incorporate these practices within primary care settings is warranted, given their demonstrated cost-effectiveness. Such integration can empower individuals to manage their own health proactively and effectively prevent or alleviate a range of NCDs, thus supporting broader health promotion and disease prevention efforts (Gupta, 2024; Salwa & Nair, 2020).

As modalities of treatment, yoga and naturopathy (YN) fulfill several significant roles: 1) promoting the adoption of healthy lifestyle practices, 2) mitigating stress and facilitating relaxation, 3) reducing inflammation and oxidative stress while enhancing immune modulation, 4) preventing adverse drug interactions due to their drugless nature, 5) improving patient acceptance and tolerance, which leads to enhanced medication efficacy and minimized side effects, 6) addressing the multifactorial etiology of diseases by treating individuals holistically—considering physical, mental, spiritual, social, and emotional dimensions—and 7) augmenting the body’s inherent healing capabilities to enhance health and prevent complications. Therefore, in the context of integration, YN can be regarded as a primary therapeutic approach that can be effectively combined with any system of medicine (whether Ayush or conventional) to address a wide array of conditions at all levels of care (primary, secondary, and tertiary) (Srilakshmi et al., 2024). Nonetheless, several challenges persist, including limited awareness among contemporary healthcare providers, insufficient interaction among practitioners, the absence of standardized protocols, and a lack of research on the synergistic effects of yoga and naturopathy. It is essential to stimulate research efforts and enhance public awareness regarding the role of yoga and naturopathy in disease prevention and health promotion to foster a comprehensive healthcare system (Saxena et al., 2024).

5. Limitations

The fields of yoga and naturopathy face several limitations that hinder their effectiveness and accessibility. These limitations include insufficient expertise in emergency care, inadequate documentation and evidence accumulation, and a lack of standardized treatment protocols. Additionally, there are notable variations in practice standards among different generations of

naturopaths. Some medical professionals express skepticism towards these practices because certain treatments lack robust scientific evidence. Although the results of various interventions are encouraging in chronic diseases, the need for regular and long-term engagement makes these treatments time-consuming and challenging for patients to adhere to. Accessibility remains a significant issue, especially for rural populations, as most facilities are concentrated in urban areas. Furthermore, existing evidence primarily focuses on non-communicable diseases, and there is a lack of a central regulatory body overseeing practices in yoga and naturopathy. This absence contributes to problems such as insufficiently trained paramedical staff and inadequate diagnostic techniques. The lack of a centralized platform for clinical updates also leads to stagnation in Continuing Medical Education programs. Financial and logistical barriers are present as well, since many healthcare systems do not cover yoga and naturopathic treatments through insurance. This further hampers access to these services and makes them less affordable for patients who must pay out-of-pocket. Patient expectations present another challenge. Some patients may rely solely on naturopathy for serious conditions, which can delay diagnosis and treatment. Others may be hesitant to incorporate naturopathic therapies due to unfamiliarity. Public understanding of yoga and naturopathy is hindered by insufficient educational materials and a lack of awareness among officials in the Ayush system. Poor outreach efforts exacerbate these challenges, limiting broader public awareness of the potential benefits of these holistic practices (Sathyalakshmi et al., 2016; Juhi et al., 2025).

6. Future Direction

Integrating yoga and naturopathy into mainstream healthcare necessitates a multifaceted approach focusing on regulatory improvements, education, collaboration, rigorous research, and patient-centered care strategies. Establishing clear guidelines and regulatory frameworks for naturopathy is paramount. This includes the development of certification and licensure processes for practitioners to ensure they possess adequate training and adhere to evidence-based practices. Regulatory bodies should define standards for the safety, efficacy, and quality of natural remedies, thereby safeguarding patient health and minimizing potential risks. To mitigate resistance from the conventional medical community, it is crucial to educate healthcare providers about the benefits, limitations, and evidence underpinning naturopathic practices. Incorporating a basic naturopathy curriculum into medical education and offering continuing education courses through accredited platforms, such as Karmyoyogi Bharat iGOT and Saksham, can facilitate this understanding. Collaboration among conventional medical doctors and naturopathic practitioners is essential. Interdisciplinary teams should work together to create comprehensive treatment plans that incorporate both conventional and naturopathic approaches. This collaborative model can enhance patient outcomes by allowing for a more holistic approach to care. High-quality, peer-reviewed research is vital for validating the effectiveness of naturopathy, particularly concerning chronic conditions such as pain management and mental health disorders. Focusing research efforts on these areas can help establish the credibility of naturopathic interventions and foster trust among both healthcare providers and patients. Patients must be adequately informed about the benefits and limitations of both conventional medicine and naturopathy to facilitate informed decision-making. Education initiatives should be developed to outline the evidence supporting various treatment options while clarifying potential risks. Moreover, integrating naturopathic services into health insurance plans and healthcare facilities can increase accessibility, ensuring that patients can easily access a combination of conventional and naturopathic treatments. This integrative

approach not only enhances patient choice but also promotes a comprehensive strategy for health and wellness in diverse patient populations (Juhi et al., 2025).

7. Conclusion

Yoga and naturopathy are integral components of the Ayush systems of medicine, which advocate for the importance of the mind-body connection in fostering holistic physical and mental wellbeing. These practices have garnered global recognition for their role in promoting health and for their efficacy in both the prevention and management of various physical and mental health conditions. Research has demonstrated that yoga can improve flexibility, strength, and cardiovascular health, while also reducing symptoms of anxiety and depression. Naturopathy, on the other hand, emphasizes the use of natural therapies and lifestyle interventions to enhance the body's innate healing processes. Despite their proven benefits, there is an urgent need for standardization and regulation within these fields. Establishing a central regulatory body could help ensure the quality and safety of practices associated with yoga and naturopathy. Furthermore, it is imperative to conduct rigorous scientific research to validate the efficacy of these therapies. Moreover, increasing awareness and education about yoga and naturopathy among healthcare professionals, policymakers, and the public is essential for their wider implementation. This will facilitate informed decision-making and promote integrative approaches to health and wellness, ultimately enhancing public health outcomes.

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Unani

Interventions for Mind and Body Health

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Executive Summary

Mental health is an important part of healthy living as it affects all spheres of life. Unani medicine offers a holistic, personalized, and preventive approach to mind-body health, emphasizing humoral balance and the body's natural healing power. With rising prevalence of stress-related disorders, lifestyle diseases, mental health conditions, and psychosomatic illnesses, integrated strategies addressing both mental and physical health are essential for sustainable wellness, effective disease prevention, and improved quality of life.

The Unani system aligns with global priorities of wellness, self-care, and integrative medicine. It emphasizes restoring the balance of the four humours (*Akhlāṭ*) and enhancing the body's natural healing capacity through lifestyle modifications and individualized therapies. Concepts, such as *Mizāj* (temperament), *Akhlāṭ* (humours), and *Asbāb Sitta Ḍarūriyya* (six essential factors) form the foundation of interventions that are practical, cost-effective, and widely acceptable.

Key Unani interventions for promoting mind-body health include *'Ilāj bi'l Ghidhā* (dietotherapy), which involves the use of specific foods and beverages to strengthen vital organs and enhance digestion, immunity, and nervous function; *'Ilāj bi'l Tadbīr* (regimenal therapy), encompassing lifestyle modifications such as sleep regulation, physical activity, emotional balance, and therapeutic procedures like massage, cupping, baths, and exercise to restore psychophysical balance; and *'Ilāj bi'l Dawā* (pharmacotherapy), which employs standardized herbal and herbo-mineral formulations to improve cognition, stabilize emotions, and strengthen overall psychosomatic resilience.

Potential outcomes include improved cognition, sleep, metabolism, immunity, and quality of life, along with reduced stress, anxiety, and reliance on long-term symptomatic medication.

This document advocates the systematic integration of Unani-based mind-body interventions into public health and wellness programs, recommending:

- Integration of Ayush and Unani approaches into preventive healthcare.
- Development of standardized, evidence-based mind-body protocols.
- Capacity building of healthcare professionals and public awareness initiatives.
- Promotion of interdisciplinary research on safety and efficacy.
- Policy support for integrative healthcare models combining conventional medicine with Ayush systems.

Overall, Unani medicine is presented as a well-established, scientifically credible system contributing to contemporary mind-body healthcare through holistic, person-centered approaches grounded in traditional principles and supported by scientific evidence.

1. Introduction

Current burden of mental and lifestyle disorders

Mental health is an integral part of health and wellbeing, and it is not just the absence of mental illness. The World Health Organization (WHO) defines mental health as ‘a state of wellbeing in which an individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a positive contribution to his or her community’. Mental health is the foundation for wellbeing and effective functioning of individuals [1, 2, 3, 4]. Mental disorders are both leading causes of disability and significant risk factors for premature mortality [5, 6]. Mental disorders affect individual health and societal welfare [7]. Mental health problems refer to conditions ranging from psychosocial distress affecting a large number of people to mental illness and mental disability affecting a relatively small number of people. Mental illness refers to specific conditions such as Schizophrenia, Bipolar Disorder, Depression or Obsessive Compulsive Disorder. Mental disability refers to disability associated with mental illness [3].

Mental and lifestyle disorders constitute a substantial and growing global health burden. In 2021, about 1.1 billion people around the world were living with a mental disorder, with anxiety and depressive disorders the most common [8, 5]. Mental disorders can severely disrupt daily life and cause long-term suffering if left untreated [8]. Globally, it is estimated that one in every seven people lives with a mental disorder [8], and up to half of all mental health conditions start before the age of 14 years [9]. In 2021, 359 million people were living with an anxiety disorder, including 72 million children and adolescents (Anonymous, 2024). Globally, an estimated 4% of the population experiences depression, including 5.7% of adults (4.6% of men and 6.9% of women), and 5.9% of individuals aged 70 years and above. An estimated 332 million people worldwide are living with depression [8, 10]. Depression is about 1.5 times more common in women than in men. Globally, over 10% of pregnant and postpartum women experience depression [11]. In 2021, an estimated 7,27,000 people lost their lives to suicide. Suicide is the third leading cause of death in older adolescents and young adults aged 15-29 years [12, 13]. Despite this high prevalence, access to effective mental healthcare is limited, with substantial treatment gaps reported across many countries. In high-income countries, only about one third of people with depression receive mental health treatment [12].

Lifestyle disorders, including cardiovascular diseases, diabetes, obesity, and metabolic disorders, represent a major global health challenge and place a substantial burden on health systems worldwide. In 2021, there were 18 million premature deaths (under the age of 70) due to lifestyle disorders or non-communicable diseases (NCDs) worldwide, of these deaths, 38% were caused by cardiovascular diseases (CVDs). An estimated 19.8 million people died from CVDs in 2022, representing approximately 32% of all global deaths. Globally, approximately 589 million adults are living with diabetes, and this number is predicted to rise to 853 million by 2050. In 2022, over 890 million adults aged 18 years and older were obese, and 2.5 billion were overweight, underscoring widespread unhealthy lifestyles linked to sedentary behaviour, poor dietary patterns, and other risk factors [14, 15, 16, 17, 18].

Globally, mental health disorders contribute significantly to disability and substantial economic burden, while a large proportion of individuals living with mental illness remain untreated due to persistent gaps in mental health services. These trends underscore the urgent need for

integrated preventive and early intervention approaches, along with comprehensive health strategies that address both mental and lifestyle-related disorders, through the incorporation of traditional Ayush systems, including Unani medicine, within sustainable public health frameworks.

Gaps in Conventional Care

Despite significant advances in conventional healthcare, substantial gaps persist in the prevention and management of mind-body health conditions. Conventional therapeutic approaches are often disease-centric and focused on symptomatic treatment, with limited emphasis on holistic care, prevention, and long-term wellbeing. Mental health services are globally under-resourced; preventive approaches to lifestyle disorders are inadequately addressed; and mental and lifestyle disorders are frequently managed through non-integrated care models. These gaps in conventional care contribute to limited preventive interventions and suboptimal management of mental and lifestyle disorders. Integrating Ayush approaches can help bridge these gaps by promoting holistic, preventive, and patient-centered care in addressing both physical and mental health conditions.

The Growing Global Interest in Integrative and Traditional Medicine

In recent years, there has been a growing global interest in integrative and traditional medicine, driven by increasing recognition of the limitations of conventional, disease-focused healthcare. Patients are seeking holistic and preventive approaches that address both physical symptoms and the mental and lifestyle-related factors influencing health. Ayush systems, including Unani medicine, offer holistic frameworks that emphasize preventive care, individualized treatment, and the interconnection of mind and body. This trend is reflected in rising utilization of complementary therapies worldwide, as well as in policy initiatives by the World Health Organization (WHO) and several national health authorities promoting integrative health strategies. Such developments underscore the potential of traditional Ayush medicine to complement modern care, particularly in managing chronic, mental and lifestyle disorders.

Purpose and Scope of this White Paper

This white paper aims to explore the potential of Ayush interventions, with a special focus on Unani medicine, in promoting mind-body health through holistic and preventive approaches. It highlights the scientific evidence, traditional principles, and clinical applications of Unani therapies in managing mental and lifestyle-related health conditions. The existing gaps in conventional healthcare delivery can be addressed through integrative models combining conventional and Ayush systems to promote patient-centered care, improve prevention strategies, and support long-term wellbeing. This paper intends to inform policymakers, healthcare practitioners, and researchers about the potential of Unani medicine to complement conventional healthcare in addressing chronic, mental health challenges.

2. Unani Framework for Mind-Body Health

Introduction to the Unani System of Medicine

Unani System of Medicine is a comprehensive medical system, which provides preventive, promotive, curative and rehabilitative healthcare with holistic approach, focusing on the balance of mind, body, and environment. The fundamental framework of Unani medicine

is based on the Hippocratic theory of four humours (*Akhlāt*) – *Dam* (sanguine), *Balgham* (phlegm), *Ṣafrā'* (yellow bile) and *Sawdā'* (black bile). Human temperament is denoted by the dominant humour, i.e., *Damawī* (sanguineous), *Balghamī* (phlegmatic), *Ṣafrāwī* (choleric) and *Sawdāwī* (melancholic). The dominance of humours affects human personality traits and behaviours. The equilibrium of four humours determines an individual's normal physiological and psychological state. Any disturbance in the humoral equilibrium causes disease, and therefore the treatment aims at restoring the humoral equilibrium through the temperament-specific drugs, diet, lifestyle modifications, and regimenal therapies for promoting overall physical and mental wellbeing. Adoption of certain *Tadābīr* (regimens) at regular intervals is conducive to the maintenance and promotion of health and the prevention and cure of many diseases. In addition, *Ṭabī'at Mudabbira-i-Badan* (medicatrix naturae) is the healing power of nature, which controls all the physiological functions of the body, provides resistance against the diseases and helps in healing naturally. Unani physicians strengthen the *Ṭabī'at Mudabbira-i-Badan* by employing single-ingredient medications, formulations, dietary regimens, and lifestyle modifications [19, 20, 21].

Relevance of Unani Medicine in Contemporary Healthcare

Unani system of medicine focuses on mind-body integration, recognizing that emotional and psychological states influence physical health and vice versa. Chronic, mental and lifestyle-related conditions are effectively managed through individualized Unani interventions, including herbal formulations, organ-specific tonics, immunomodulators, and nutraceuticals, along with preventive and dietary guidance. With growing global interest in traditional and integrative medicine, India has emerged as a key centre for traditional Ayush education, research, and drug export, fostering international collaborations to advance its integration into contemporary healthcare for holistic mind-body health.

Individualized Unani medicine interventions, including herbal formulations, organ-specific tonics, immunomodulators, correctives for adverse effects, *'Ilāj bi'l Tadabīr* (regimenal therapies), *Mundij Mushil* (concoctive-purgative) therapy, and *'Ilāj bi'l Taghdhiya* (nutraceuticals/ dietotherapy) not only manage symptoms but also enhance resilience, mental wellness, and overall wellbeing, highlighting the relevance of Unani medicine in addressing contemporary public health challenges [21].

Mind-Body Integration in Unani Medicine versus Conventional Biomedicine

Rooted in the humoral theory (*Akhlāt*) and the concept of temperament (*Mizāj*), Unani system of medicine conceptualizes mind-body health as an integrated state in which physiological, emotional, and cognitive functions are intrinsically interconnected. Emotional disturbances such as stress or anger are seen as potential disruptors of humoral balance, which can manifest as physical illness, while physical disorders can, in turn, affect mental wellbeing. This psychosomatic and holistic approach enables Unani Therapeutic interventions to simultaneously address physical, mental, and lifestyle dimensions, through individualized regimens, diets, drugs, and behavioral modulation (regulation of rest and activity), offering a more integrated framework for managing chronic, mental and lifestyle disorders [21]. In contrast, conventional biomedicine typically approaches mind and body as functionally distinct domains, often treating psychological and somatic disorders through separate diagnostic and therapeutic pathways, with integration occurring primarily at the level of co-morbidity rather than as a foundational principle of health.

3. Conceptual Foundations for Mind-Body Health

Unani system of medicine is based on a holistic concept of the human being, in which mind (*Nafs*) and body (*Badan*) function as an integrated unit regulated by inherent natural principles. Its holistic approach considers the individual in relation to their environment and focuses on the health of the body, mind, and soul [21]. Health (*Ṣiḥḥat*) is defined as a state of equilibrium (*I'tidāl*) among physical, psychological, and functional components, in which the entire bodily functions are performed normally; whereas, disease (*Marād*) is an abnormal state of the body due to abnormal temperament (*Sū'-i-Mizāj*) or abnormal composition (*Sū'-i-Tarkīb*), which directly or indirectly causes disturbance in its normal functioning [22, 23, 24, 25]. The balance between mind and body is crucial in the metabolic processes, and counseling is usually offered towards this goal [26]. Ancient Unani scholars recognized emotional disturbances such as grief, fear, anger, and anxiety as primary aetiological factors capable of altering physiological processes and precipitating somatic disorders. This integrative perspective places mental health as both a determinant and an outcome of bodily wellbeing [27].

A central theoretical framework for mind-body health in Unani medicine is the concept of *Mizāj* (temperament), which holds that each individual possesses a unique temperament shaped by their humoral constitution, lifestyle, and environmental influences. *Mizāj* (temperament) governs not only anatomical and physiological traits, but also mental disposition, emotional stability, and behavioral responses [21, 25, 28]. Unani physicians provide holistic, temperament-based therapies and prescribe medications according to the patient's temperament, the causative humor, the functional faculty of the affected organ, and the severity of the disease. Temperament is also taken into consideration for identifying the most suitable diet and lifestyle for promoting the health of a particular individual. Specific dietary regimens are recommended based on the patient's temperament during treatment [21]. Individuals with balanced temperaments exhibit psychological resilience, whereas deviation from innate *Mizāj* (temperament) predisposes individuals to emotional and psychosomatic disorders. Mental health problems are viewed as manifestations of disturbed cerebral temperament, emphasizing the necessity of temperament-specific lifestyle, dietary, and therapeutic interventions to restore psychological harmony [27, 29].

Another fundamental framework of Unani medicine is the Hippocratic theory of four humours (*Akhlāt*) – *Dam* (sanguine), *Balgham* (phlegm), *Ṣafrā'* (yellow bile) and *Sawdā'* (black bile), which play a decisive role in regulating both physical and mental functions [27]. Abnormal predominance or derangement of specific humors is associated with characteristic psychological states, such as melancholia due to excess *Sawdā'* or excitability and agitation linked with *Ṣafrā'* dominance. Unani therapeutics emphasizes humoral correction through integrated modalities including '*Ilāj bi'l Taghdhiya* (nutraceuticals/ dietotherapy), '*Ilāj bi'l Tadbīr* (regimenal therapy), '*Ilāj bi'l Dawā'* (pharmacotherapy) and '*Ilāj Nafsānī* (psychotherapy/ psychiatric treatment), reflecting an early biopsychosocial approach to health [21, 29].

The balance in all the *Asbāb Sitta Darūriyya* (six essential factors) contributes directly or indirectly in achieving physical and mental health. However, *Ḥarakat-o-Sukūn Nafsānī* (psychic movement and repose) is directly related to the mental health of an individual. Failure to maintain the balance in *Ḥarakat-o-Sukūn Nafsānī* may result in the disturbance of *Quwwat Nafsāniyya* (psychic faculty) [2]. *Quwwat Nafsāniyya* (Psychic Faculty) is the neural faculty responsible for sensory perception and voluntary motor functions, regulating cognition,

emotions, and action through the brain and nervous system via the vital spirit (*Rūh*) [21, 25]. Further, an imbalance in sleep and wakefulness may also lead to psychological disorders. Likewise, accumulation of *Fāsid Mawād* (morbid matter) which is supposed to be habitually evacuated from the body may result in mental disorders [2].

Prolonged psychological stress, behavioral dysregulation, and excessive cognitive demand can impair neuropsychological and autonomic functions, predisposing individuals to systemic physiological disturbances. Accordingly, Unani medicine emphasizes preservation of neural homeostasis through stress regulation, healthy behavioral self-control practices, adequate sleep, regular physical activity, and lifestyle moderation as key preventive and health-promoting strategies for maintaining integrated mind-body health, mental wellbeing and disease prevention [21, 24]. This comprehensive framework positions Unani medicine as a historically established and scientifically robust integrative health model that emphasizes neuropsychological regulation, lifestyle-based prevention, and holistic mind-body health across physiological systems.

4. Evidence Landscape

Unani Medicine Perspective for Happiness Index (Health, wellbeing and wellness, rejuvenation and longevity)

i. Happiness Index in Unani Medicine

From the Unani medicine perspective, Happiness Index is conceptualized as a holistic state of wellbeing comprising the dynamic equilibrium of physical, mental, and spiritual health. This dynamic equilibrium is maintained through the harmonious interaction of the following core factors:

- *Akhlāt* (humours): the four body humours (blood, phlegm, yellow bile, and black bile) that collectively regulate a person's optimal physiological and psychological functions.
- *Mizāj* (temperament): a person's innate constitution of hot, cold, wet, and dry qualities, determined by the dominance of a particular humour.
- *Ṭabī'at* (medicatrix naturae): the body's self-regulating and healing power.

Health is achieved when these factors are in equilibrium; imbalance leads to disease and reduced wellbeing [21, 30, 31].

A systematic review suggests a relationship between dystemperament and incidence of several diseases, implying that imbalances in temperament (*Mizāj*) may manifest as physiological and psychological disturbances, thereby providing an important scientific bridge between classical Unani concepts and contemporary health frameworks [32].

ii. Health, Wellbeing & Wellness

In Unani medicine, maintaining a balance in *Asbāb Sitta Darūriyya* (the six essential factors: air, foods and drinks, bodily movement and repose, psychic movement and repose, sleep and wakefulness, and retention and evacuation) is considered essential for achieving optimal physical and mental health. Wellbeing and wellness are achieved through the holistic integration of physical body, mind, and spirit.

Unani medicine places strong emphasis on preventive and promotive health behaviours, including diet (*'Ilāj bi'l Ghidhā'*), lifestyle regulation (*'Ilāj bi'l Tadbīr'*), and natural medicinal support (*'Ilāj bi'l Dawā'*), to maintain physical and mental health. *'Ilāj bi'l Ghidhā'* (dietotherapy): Classical Unani literature and recent scholarly reviews highlight the role of dietary modulation in maintaining health and preventing disease, aligning with principles of modern nutrition science and global health guidelines [33].

'Ilāj bi'l Tadbīr' (regimenal therapy) is modification in *Asbāb Sitta Darūriyya* (six essential factors) and application of regimens for maintenance of health as well as for management of diseases. These frameworks resonate with contemporary wellness models that emphasize balanced lifestyle behaviours (nutrition, sleep, stress management, physical activity) as foundational to physical and psychological wellbeing [21].

iii. Clinical Evidence and Therapeutic Outcomes

Emerging clinical evidence provides preliminary support for the role of Unani interventions in enhancing overall health and wellbeing, while underscoring the need for further high-quality research.

- **Sleep and Mental Health:** Regimenal therapies (*'Ilāj bi'l Tadbīr'*), such as massage, oiling, and other lifestyle interventions, have been systematically reviewed for conditions like insomnia, demonstrating beneficial effects on sleep quality, which is a key determinant of emotional wellbeing and overall happiness [34]. A clinical case study demonstrated significant improvement in chronic insomnia with a Unani polyherbal formulation, suggesting potential benefits for sleep-related components of wellbeing [35].
- **Lifestyle and Metabolic Disorders:** Case outcomes indicate that Unani dietary and regimenal therapies may positively influence body weight, lipid profiles, and metabolic health, which are closely associated with physical and mental health and overall wellbeing [36]. A systematic review and meta-analysis evaluating *Hijāma* (cupping therapy) for metabolic syndrome, encompassing five RCTs (n=489), reported statistically significant reductions in waist circumference, body weight, body mass index (BMI), and low-density lipoprotein cholesterol (LDL-C) [37]. A systematic review and meta-analysis of anti-obesity effects of cupping, encompassing 21 RCTs, reported meaningful reductions in body weight, BMI, hip and waist circumference [38].
- **Chronic Diseases:** Randomized controlled clinical trials comparing Unani formulations with established therapies have shown non-inferior clinical outcomes in chronic conditions such as psoriasis that can significantly impact psychological and mental wellbeing, supporting the safety and therapeutic potential of Unani interventions [39]. *Hijāma bilā Sharṭ* (dry cupping) has been reported to reduce fatigue and improve quality of life in women with multiple sclerosis, suggesting potential benefits for overall wellbeing, including physical, mental, and emotional functioning [40].
- **Geriatric Wellness and Healthy Aging:** The health in elderly individuals may be preserved and promoted through use of Turkish bath, which prevents accumulation of morbid humours and waste products, increases innate heat, and enhance digestive and excretory functions [22]. Scholarly reviews highlight Unani's holistic framework for geriatric care that aims to preserve innate vitality and delay age-associated decline through tailored regimens and therapeutic interventions [41, 42].

iv. Implications for Happiness, Rejuvenation & Longevity

Based on current evidence and classical principles, the Unani concept of happiness may be positioned as a holistic health index, encompassing not only the absence of disease but the presence of equilibrium across physical, mental, and lifestyle domains. This reinforces the integrative and preventive approach of Unani medicine, highlighting its relevance for contemporary health promotion and mind-body wellness. Evidence suggests that balanced temperament and humours correlates with lower disease risk and better physiological health [43]. Appropriate diet and regimen improves metabolic markers and supports preventive health [44].

Clinical Unani interventions show therapeutic promise across chronic conditions that negatively impact quality of life [35]. Reviews of Unani pharmacotherapeutic interventions have reported hepatoprotective, antioxidant, and metabolic effects in conditions such as non-alcoholic fatty liver disease (NAFLD), linking Unani remedies with improvements in physiological markers of health that contribute to longevity and quality of life [45].

Rejuvenation and longevity are fostered by maintaining internal equilibrium, strengthening vital organs, practicing moderation, and cultivating psychological and spiritual wellbeing, emphasizing that true happiness is a sustainable, intrinsic state arising from harmony within the body, mind, and spirit [21, 30]. These findings support the notion that maintaining internal equilibrium through lifestyle interventions, nutrition, and individualized therapies may contribute to enhanced wellbeing, vitality, and potential longevity, consistent with Unani's holistic view of happiness as a sustainable state of wellness. While the evidence base is growing, larger, well-designed randomized controlled clinical trials (RCTs) are required to further assess the impact of Unani interventions on psychological wellbeing and measures of happiness.

Unani Interventions for Mental Wellbeing (Stress, anxiety and depression, public health, lifestyle and dietary interventions)

Unani medicine emphasizes a personalized approach to health and wellbeing, balancing the body, mind, and spirit through a combination of exercise, diet, lifestyle modifications, therapeutic drugs, and treatment practices. Unani medicine conceptualizes mental health conditions such as stress, anxiety, depression, and related psychosocial disturbances through an integrated mind-body framework, attributing them to humoral imbalance, particularly *Sawdā'* (black bile) and *Ṣafrā'* (yellow bile) and disruption of neuro-psyche equilibrium. Traditionally, Unani therapeutic approaches have supported mental wellbeing through lifestyle, dietary, and herbal interventions. Emerging scientific evidence, though still limited compared with mainstream biomedical research, indicates that Unani interventions may offer potential therapeutic benefits.

Clinical Efficacy in Anxiety and Depression Disorders

In Unani perspective, depression is a symptom or group of symptoms of *Mālankhūliyā* (melancholia) in which the mental functions are deranged and the affected person is more prone to constant grief, fear and dubious aggression. Unani formulations, including *Ma 'jūn-i-Najāh*, *Sharbat-i-Ābresham*, *Dawā' al-Misk*, *Khamīra-i-Ṣandal*, *Iṭrīfal Zamānī*, and *Iṭrīfal Saghīr* are used in the management of depression and *Mālankhūliyā*. *Iḍṭirāb Nafsānī* (anxiety)

is a psychological and physiological state characterized by somatic, cognitive, emotional and behavioural components. Unani formulations, including *Khamīra-i-Khashkhāsh*, *Mufarriḥ Yāqūtī*, *Ma'jūn-i-Najāh*, *Khamīra-i-Ābresham*, *Dawā' al-Misk*, and *Khamīra-i-Şandal* are used in the management of *Iḍṭirāb Nafsānī* (anxiety) [2].

A published case report documented the efficacy of a Unani intervention, *Aftimoon Vilayati* in the management of *Iḍṭirāb Nafsānī* (anxiety). Significant post-treatment improvement was observed using HAM-A, BAI, and QoL scales. These outcomes align with the principles of Unani medicine, attributing anxiolytic effects to the evacuation of *Sawdā'* (black bile), and the action of bioactive constituents such as flavonoids, supported by lifestyle and dietary modifications [46].

Mixed Anxiety Depressive Disorder (MADD) is a prevalent mental health condition affecting overall wellbeing. *Majoon Najah*, a polyherbal Unani pharmacopoeial formulation with potential anxiolytic and antidepressant properties is used in the management of MADD. It contains several medicinal plants known for their neuroprotective and mood-stabilizing effects, including *Terminalia chebula* Retz. (*Post-e-Halela Kabli*), *Terminalia bellerica* Roxb. (*Post-e-Balela*), *Emblica officinalis* Gaertn. (*Aamla*), and *Cuscuta reflexa* Roxb. (*Aftimoon*), etc. A recent prospective clinical trial evaluated the safety and efficacy of *Majoon Najah* in adults diagnosed with Mixed Anxiety Depressive Disorder (MADD). Over a six-week intervention, significant reductions were observed in both Hamilton Anxiety Rating Scale (HAM-A) and Hamilton Depression Rating Scale (HAM-D) scores, indicating clinically meaningful improvement in anxiety and depressive symptoms without adverse laboratory changes. This supports the utility of Unani polyherbal therapy in mood regulation and mental well-being [47].

Case series evidence also suggests that integrative Unani treatment protocols, combining *Ilāj bi'l Tadbīr* (regimenal therapy), e.g., *Naṭūl* (forehead irrigation with medicated oil), *Sa'ūt* (nasal drops), and *Tadhīn* (oiling), with Unani formulations such as *Majoon Njah*, *Jawarish Shahi* (5 g twice daily), and *Dawa-ul-Misk Sada* with *Arq Gawzaban* (5 g and 60 ml twice daily), are effective in the management of major depressive disorder (MDD) diagnosed using the DSM-V criteria, aligning with traditional diagnostic category, i.e., *Mālankhūliyā Sawdāwī* diagnosed using Unani criteria. Over the 17-week treatment period, the intervention significantly improved quality of life (QoL) and alleviated depressive symptoms, as evidenced by significant reductions in scores on the Hamilton Depression Rating Scale (HDRS-21), Beck Depression Inventory (BDI), and Insomnia Severity Index (ISI) [48].

A 35-year-old male patient with chronic insomnia was treated with a 50% hydroalcoholic extract of a Unani polyherbal formulation (AFA), comprising *Asrol* (*Rauwolfia serpentina* Benth ex. Kurz), *Filfil Siyāh* (*Piper nigrum* L.), and *Asgand* (*Withania somnifera* (L.) Dunal), in the dose of 500 mg daily for six weeks. The Insomnia Severity Index (ISI) score was reduced from 26 (severe insomnia) at baseline to 2 (no clinically significant insomnia) after 6 weeks of treatment. The intervention led to improvements in sleep onset, sleep quality, and sleep continuity, with no reported adverse effects and normal laboratory parameters, suggesting both the safety and effectiveness of the formulation in managing chronic insomnia [35].

Broader systematic and scoping reviews of botanicals traditionally used in Unani medicine, particularly in menopausal women, have found evidence that plant-derived bioactive

compounds may significantly alleviate depressive, anxiety, and stress symptoms, potentially via GABAergic, serotonergic, and anti-inflammatory mechanisms [49].

Preclinical and Pharmacological Evidence

Preclinical research continues to explore the neuromodulatory potential of Unani formulations. The antidepressant activity of *Khamīra Gāozabān Sāda* (KGS) was evaluated using two experimental models: the modified forced swimming test (FST) and reserpine-induced depression in Swiss albino mice. Oral administration of KGS and its hydroalcoholic and aqueous extracts for 14 days produced significant antidepressant effects in both models, as evidenced by a marked reduction in immobility time, indicating central nervous system activity relevant to mood regulation [50].

Additional pharmacological studies have reported significant anxiolytic activity of Unani herbal extracts, providing preclinical validation of classical Unani claims regarding anxiety management. In the Unani system of medicine, *Barg-i-Gāozabān* (*Borago officinalis* L.) has long been used in the treatment of mental illnesses such as melancholia, schizophrenia, and anxiety. Aqueous extracts of *Barg-i-Gāozabān* derived from two species – *Borago officinalis* L. and *Anchusa strigosa* Banks & Sol., demonstrated significant anxiolytic effects in albino Wistar rats, thereby supporting Unani claims regarding their utility in the management of depressive and anxiety-related disorders. These effects may be attributed to the presence of bioactive phytochemicals, including flavonoids, alkaloids, triterpenoids, and tannins [51].

Unani medicine places strong emphasis on the physiopathology and holistic management of mental disorders. A systematic review of Unani classical literature identified 43 single drugs and 38 polyherbal formulations used in the management of neurodegenerative disorders. These Unani drugs demonstrate a broad spectrum of pharmacological activities, including neuroprotective, anti-Alzheimer's, anti-Parkinsonism, anti-convulsant, antidepressant, anxiolytic, and cognitive-enhancing effects, all of which are relevant to stress resilience and mental wellbeing. Medicinal plants such as *Brahmi* (*Bacopa monnieri*), *Waj Turki* (*Acorus calamus*), *Chilghoza* (*Pinus gerardiana*) and *Asgand* (*Withania somnifera*), along with several others, have been shown to enhance cognitive function, reduce oxidative stress, and support neuronal health, highlighting their potential role in promoting mental and neurological health [52].

Lifestyle, Regimenal, and Nutritional Interventions

In Unani Medicine, diet plays a significant role in maintaining health and treating diseases. The system emphasizes '*Ilāj bi'l Ghidhā*' (dietotherapy), which involves using specific dietary regimens to address health issues. Unani physicians consider the influence of food and drink on health and prescribe dietary adjustments as part of treatment. Additionally, diet, referred to as "*Ghidhā*," consists of substances that, after administration and transformation (*Istihāla*), become part of the body or organ and provide nourishment (*Badal Mā Yatahallal*). Maintaining proper eco-balance and consuming pure food and water are also considered essential for good health [23]. Unani regimenal therapies (*Ilāj bi'l Tadbīr*), which encompass sleep regulation strategies, physical activity, and stress-modulating practices, have shown promise in traditional clinical contexts. A scoping review of regimenal therapy approaches for insomnia management reported positive outcomes in alleviating sleep disturbances, a common comorbidity of stress and mood disorders, while demonstrating favorable safety profiles [34].

'*Ilāj bi'l Ghidhā*' (Dietary modulation), a core Unani principle is increasingly recognized scientifically for its role in mental health. Contemporary reviews highlight how balanced nutrition and specific dietary patterns influence neuroendocrine and inflammatory pathways implicated in depression and anxiety, bridging Unani dietetic concepts with modern nutritional psychiatry. Emerging research indicates that nutrition and dietary habits play a significant role in the management of depression. Healthy dietary patterns, such as the Mediterranean diet, are associated with a lower risk and reduced severity of depression. Essential nutrients, including omega-3 fatty acids, vitamin B, folate, vitamin D, and magnesium, support mood regulation, cognitive function, and overall mental health. Conversely, Western dietary patterns high in processed foods, refined sugars, and trans fats have been linked to an increased risk of developing depression. Recent research also emphasizes the role of the gut-brain axis, with gut microbiota imbalances contributing to inflammation and depressive symptoms. Dietary interventions targeting nutrient-dense foods and balanced dietary patterns offer a promising adjunct to conventional treatments for depression. Incorporating such interventions may help reduce depressive symptoms, improve mental health outcomes, and support long-term psychological wellbeing [53].

A single cupping session for low back pain has been reported to improve sleep outcomes, a key lifestyle and psychological factor, indicating potential indirect benefits for mental health, including enhanced sleep quality [54]. *Hijāma bilā Sharṭ* (dry cupping) for chronic non-specific neck pain was associated with improvements in pain, functional disability, and quality-of-life measures, including mental health subscales, highlighting both physical and psychosocial benefits [55]. *Hijāma bi'l Sharṭ* (wet cupping therapy) significantly reduced both physiological and mental pain in patients with migraine, suggesting its efficacy in alleviating psychological distress alongside physical pain and supporting its potential role in enhancing mental wellbeing [56].

Conceptual Integration with Public Health and Behavioral Medicine

Unani medicine emphasizes balanced temperament (*Mizāj*), humoral equilibrium, routine regulation, and psychosocial harmony, aligning closely with modern public health frameworks for mental health promotion, preventive care, and lifestyle medicine. Central to this approach is the Unani preventive philosophy of the *Asbāb Sitta Darūriyya* (six essential factors), which include *Hawā'* (air), *Ma'kūlāt-o-Mashrūbāt* (foods and drinks), *Ḥarakat-o-Sukūn Badanī* (bodily movement and repose), *Ḥarakat-o-Sukūn Nafsānī* (psychic movement and repose), *Nawm-o-Yaqza* (sleep and wakefulness), and *Ihtibās wa Istifrāgh* (retention and evacuation). These factors are considered foundational for synchronized physiological and psychological rhythms and overall wellbeing.

Moderation of these six essential factors is an important aspect of Unani medicine for maintaining good health and preventing diseases. By optimizing these six determinants, Unani regimenal models support circadian rhythm regulation, nutritional adequacy, physical activity, detoxification, and psychological balance. This approach helps mitigate chronic stress, enhance emotional resilience, and promote holistic quality of life through structured lifestyle and environmental interventions. Such integrative models affirm the relevance of Unani lifestyle guidelines within contemporary preventive health paradigms [21].

Unani Interventions for Lifestyle Disorders (Cancer, metabolic disorders, addiction disorders, others: pediatric, women, geriatric care, etc.)

Metabolic Disorders (Diabetes & Metabolic Syndrome)

Type 2 Diabetes Mellitus (T2DM)

A healthy diet, regular physical activity, and maintaining a normal body weight are ways to prevent or delay the onset of type 2 diabetes. Systematic clinical evidence shows that Unani medications can improve glycaemic control. A systematic review of randomized clinical trials reported that various Unani medications significantly reduced blood glucose levels in patients with T2DM [57].

Evaluation of *Qurs-e-Ziyabetus* in Type-2 Diabetes Mellitus

In a randomized controlled clinical trial, a Unani formulation, *Qurs-e-Ziyabetus*, was administered in the dose of three tablets (800 mg each) three times daily and compared with glibenclamide (5 mg once daily before breakfast) for 90 days in 50 patients with type 2 diabetes mellitus. The findings indicated that *Qurs-e-Ziyabetus* was effective in reducing blood glucose levels and HbA1c in patients with type 2 diabetes [58].

Clinical Study on *Ziabetus Shakri* with a Polyherbal Unani Formulation

In a randomized, standard-controlled clinical study, a Unani polyherbal formulation containing *Nigella sativa* (Shoneez), *Cinnamomum zeylanicum* (Darchini), *Trigonella foenum-graecum* (Hulba), and *Syzygium cumini* (Maghz Tukhm-e-Jamun) was found to be effective and safe in the management of type 2 diabetes mellitus, thereby supporting its traditional use in Unani literature for glycaemic control and symptomatic relief in diabetes [59].

Efficacy of *Qurs-e-Gulnar* in Type-2 Diabetes (Single-Blind RCT)

In a single-blind, randomized controlled clinical trial, a Unani formulation, *Qurs-e-Gulnar*, was administered at a dose of three tablets twice daily and compared with Diabeat (two capsules twice daily) before meals for 45 days in 40 patients with type 2 diabetes mellitus. *Qurs-e-Gulnar* demonstrated a significant anti-diabetic effect, with improvements observed in both subjective and objective parameters in the test group compared with the control group [60].

Efficacy of a Non-Pharmacopoeial Unani Formulation versus Glibenclamide

In a parallel-group, randomized controlled clinical trial, a non-pharmacopoeial Unani formulation was compared with oral glibenclamide (5 mg once daily) over 90 days in 100 patients with type 2 diabetes mellitus. The test formulation produced statistically and clinically significant reductions in fasting and postprandial blood glucose and HbA1c levels, with safety and effectiveness comparable to glibenclamide [61].

Unani Polyherbal Adjuvant Therapy with Metformin

A double-blind, randomized, placebo-controlled study investigated a polyherbal Unani drug as an adjuvant to metformin in Type-2 Diabetes patients inadequately controlled by metformin alone. Over 12 weeks, the Unani add-on group experienced a significant reduction in HbA1c, fasting plasma glucose, and postprandial plasma glucose compared to placebo, suggesting that adjunctive use of Unani medications may enhance glycaemic control in patients not achieving goals with standard oral therapy [62]. An exploratory review suggests that the hypoglycaemic effects of Unani herbs may involve, in part, modulation of the gut microbiota as a plausible

mechanism, reflecting an emerging integrative understanding between traditional therapeutic principles and contemporary physiological pathways [63].

Metabolic Syndrome & Obesity

Narrative and conceptual reviews of Unani approaches emphasize preventive frameworks for metabolic disorders grounded in core Unani principles, such as *Asbāb Sitta Darūriyya* (six essential factors), which focus on preserving metabolic function and humoral balance. These frameworks show conceptual overlap with contemporary understandings of lifestyle-related risk factors, including diet, physical activity, sleep, and psychosocial regulation, thereby offering a complementary perspective to modern preventive medicine [64].

Integrative Unani Personalized Regimen (IUPR) for Reducing Metabolic Syndrome Risk Factors

A randomized, open-label controlled clinical study evaluated the effects of an Integrative Unani Personalized Regimen (IUPR) over eight weeks in 50 patients with metabolic syndrome. The Unani regimen produced significant reductions in measures of central obesity (body weight and waist circumference) as well as systolic and diastolic blood pressure compared with standard drug controls. Reductions in serum triglycerides and fasting blood glucose were comparable between groups, while high-density lipoprotein (HDL) levels showed a modest increase in the Unani group. These findings suggest that personalized Unani interventions may improve key risk factors of metabolic syndrome, with good tolerability and no reported adverse events [65].

Open-Label Clinical Trial of Jawarish Bisbasa in Central Obesity and Dyslipidemia

In an open-label clinical study, a polyherbal Unani formulation, *Jawarish Bisbasa*, was administered at a dose of 7 g twice daily for eight weeks in 88 patients with central obesity and dyslipidaemia associated with metabolic syndrome. Participants demonstrated significant reductions in body mass index (BMI), waist circumference, waist-to-hip ratio, and sagittal abdominal diameter. Serum lipid profiles also improved, with significant decreases in total cholesterol and triglycerides and a significant increase in high-density lipoprotein (HDL) cholesterol. No adverse effects were reported, suggesting the formulation's potential efficacy in managing key components of metabolic syndrome [66].

Case Study of Jawarish Bisbasa on Dyslipidemia and Anthropometric Parameters

A detailed open-analysis case report of a 28-year-old man with dyslipidaemia and central obesity treated with *Jawarish Bisbasa* for eight weeks documented notable improvements in lipid parameters (total cholesterol, triglycerides, LDL, and VLDL), along with reductions in body weight, body mass index, and waist circumference, and an increase in HDL levels. No adverse events were reported. This case supports clinical observations that Unani formulations may favorably influence metabolic risk profiles associated with metabolic syndrome [67]. Reviews of Unani botanicals such as *Rummān* (*Punica granatum* L.) highlight substantial therapeutic potential in the management of metabolic syndrome (MetS). Rich in polyphenols and flavonoids, pomegranate exhibits antioxidant, anti-inflammatory, lipid-lowering, antihypertensive, and insulin-sensitizing effects, that target multiple pathophysiological components of MetS, including oxidative stress, chronic inflammation, dyslipidaemia, hypertension, insulin resistance, and obesity. Emerging evidence of antidiabetic activity and gut microbiota modulation further supports its role as a rational adjunct in integrative metabolic

care. These multifaceted properties reinforce the scientific rationale for its traditional use in Unani medicine and support its potential role as an adjunct in integrative management strategies for MetS [68].

Addiction & Behavioral Related Disorders

Traditional Unani literature emphasizes holistic lifestyle regulation and regimenal therapy (*'Ilāj bi'l Tadbīr*) as supportive approaches for behaviour-related conditions, while also highlighting existing research gaps that warrant further clinical investigations. Detoxification using Unani drugs is considered helpful in minimizing withdrawal effects, whereas associated psychosomatic manifestations are generally managed through symptomatic treatment. Common clinical features are addressed with classical Unani formulations, such as *Itrīfal Kishnīzī* for headache, *Khamīra-i-Ābresham* for anxiety and agitation, and *Rowghan-i-Labūb Sabā* applied to the scalp for insomnia. Regimenal therapies like *Dalk* (massage) with warm, herb-infused oils are also employed to relieve stress, anxiety, and feelings of restlessness associated with withdrawal symptoms [2]. The findings of a review indicate that Unani scholars had developed a structured and comprehensive approach, particularly for opium addiction, which is sufficiently systematic to serve as a general framework for managing dependence on other substances. Overall, the study concludes that Unani medicine holds significant promise in the field of de-addiction and offers valuable leads for the identification and future development of herbal interventions for substance use disorders [69].

Unani Interventions for Cancer

Preclinical & Traditional Evidence

In vitro studies of traditional Unani herbal extracts (aqueous, methanolic, and hydroethanolic) from *Agaricus albus* L. demonstrated antioxidant activity and cytotoxic effects against human breast cancer cells (MCF-7), supporting the potential anticancer phytochemical properties attributed to *Dāfi'-i-Saratān* (anticancer) in Unani medicine [70].

Preclinical studies have demonstrated that several medicinal plants traditionally used in Unani medicine as *Dāfi'-i-Saratān* (anticancer) exhibit significant anticancer activity. Extracts of *Achyranthes aspera* exhibited anti-proliferative effects in pancreatic cancer cell lines and in vivo models, while *Acorus calamus* showed cytotoxicity against breast cancer cells. *Artemisia absinthium* displayed complementary anticancer activity, and *Berberis aristata* demonstrated cytotoxic effects in Ehrlich ascites carcinoma and colon cancer models. *Bauhinia variegata* extracts exhibited antibacterial, antioxidant, and anticancer activities, with both in vitro and in vivo studies confirming their cytotoxic potential. *Cedrus deodara* stem wood isolates showed chemically standardized anticancer effects, whereas *Cuscuta reflexa* displayed anti-inflammatory and anti-proliferative activity in vitro. *Glycyrrhiza glabra* and *Jatropha curcas* methanolic extracts exerted cytotoxic and antioxidant effects, while *Picrorhiza kurroa* nanoformulations inhibited growth of human cancer cell lines. *Semecarpus anacardium* extracts induced apoptosis in breast cancer cells, and *Solanum nigrum* peptide lunasin prevented cancer progression via epigenetic modulation. Fruits and extracts of *Terminalia chebula* demonstrated anticancer activity in Ehrlich ascites carcinoma and breast cancer models, and *Tinospora cordifolia* alkaloids exhibited cytotoxicity in vitro. Finally, *Withania somnifera* roots, stems, and leaves, particularly its flavonoid compounds, showed broad-spectrum anticancer effects across multiple human cancer cell lines. Collectively, these findings provide preclinical

evidence supporting the phytochemical and therapeutic basis of these botanicals as anticancer agents in accordance with Unani principles [71-91].

Polyherbal Unani Formulation Habb-e-Ustukhuddus Shows Anticancer Activity in a Preclinical Study

In preclinical studies, the Unani polyherbal formulation *Habb-e-Ustukhuddus* demonstrated significant anti-proliferative and pro-apoptotic effects against human lung and breast cancer cell lines. It also effectively inhibited cancer cell invasion and migration and showed no evident toxicity in mice at the tested doses, suggesting a favorable safety profile and supporting its potential for further experimental and clinical research [92].

Habb-e-Asgandh Shows Antitumor Efficacy in a Preclinical/ Experimental Study

The experimental evaluation of the polyherbal Unani formulation *Habb-e-Asgandh* demonstrated adjunctive antitumor activity through multi-mechanistic cytotoxic effects in a cancer cell model (U266 multiple myeloma cells), suggesting potential therapeutic utility alongside conventional chemotherapeutic agents [93].

Clinical Trial Involving Herbal Intervention in Oral Leukoplakia

In a pilot clinical study, curcumin lozenges administered to patients with oral leukoplakia (a precancerous lesion of the oral mucosa) led to noticeable reduction in lesion size and favorable histopathological changes over a three-month treatment period, suggesting potential therapeutic benefits, particularly in cases of mild dysplasia [94]. Literature surveys of classical Unani texts catalogue several plantbased Unani remedies purported for cancer management and prevention, and emerging reviews consolidate evidence for anticancer potential of selected herbs [95]. Although ancient texts and historical analyses describe the conceptualization of cancer (*Saraṭān*) in Unani medicine and its classical therapeutic formulations, they primarily represent traditional frameworks rather than evidence from modern randomized controlled trials [96]. Robust clinical evidence for Unani interventions in human cancer treatment remains very limited. Most contemporary evidence arises from preclinical and phytochemical profiling rather than controlled clinical trials, indicating significant research opportunities.

Pediatric/ Women/ Geriatric Care

Elderly individuals are particularly susceptible to mental and lifestyle-related disorders due to age-related brain changes, chronic illness, sensory impairment, and socioeconomic dependence. Common mental health conditions include anxiety, mood disorders, and dementia, while sedentary behaviour contributes to obesity and declining overall health. Although ageing is inevitable, appropriate preventive and therapeutic measures can help slow disease progression and improve quality of life.

Unani Medicine categorizes the state of the body into health (*Siḥḥat*), disease (*Marad*), and a state of neither complete health nor disease (*Lā Siḥḥat Lā Marad*), which applies to conditions like old age. It emphasizes maintaining health through prevention, including six essential factors (*Asbāb Sitta Daruriyya*): air, food and drinks, bodily movement and repose, psychic movement and repose, sleep and wakefulness, and evacuation and retention. Specific conditions relevant to elderly care mentioned in Unani Medicine include *Ṭarash* (impaired hearing), *Diqq al-Shaykhūkha* (senile generalized atrophy), *Ḥikka al-Mashāyikh* (senile pruritus), *Ghānḡharānā Shaykhūkhiyya* (senile gangrene), and *Wahn al-‘Izām* (osteoporosis) [23].

Unani medicine provides a holistic framework for geriatric care by emphasizing the strengthening of *Quwwat Mudabbira-i Badan* (medicatrix naturae), which underpins immunity and overall health. Ageing is viewed as a decline in this vital force, and care focuses on individualized dietotherapy, regimenal therapies, and pharmacotherapy to promote longevity and healthy ageing. Classical practices, supported by scientific evidence, highlight the antioxidant, immunomodulatory, and anti-ageing potential of Unani remedies. *Medicinal Plants for Longevity: Evidence-Based Geriatric Care Approach of Unani Medicine*, published by the Central Council for Research in Unani Medicine (CCRUM), documents 35 medicinal plants traditionally used to promote longevity, support healthy ageing, and aid in the prevention and management of chronic diseases [97].

In Unani Medicine, geriatric care, referred to as “*Tadābīr-i-Mashāyikh*,” is a regimen designed to maintain the health and wellbeing of elderly individuals. It includes dietary guidelines, physical activity recommendations, and management of age-related ailments. Preservation and promotion of health in elderly individuals may be supported through regimenal therapies, including rehabilitative interventions and lifestyle measures such as consumption of suitable diet and drinks, regular cleansing of bowels, warm and moist baths, adequate sleep, moderate exercise and massage, and topical application of suitable oils on the body [22].

Unani regimenal therapies and classical formulations targeting age-related decline have been highlighted in recent reviews, which underscore their antioxidant, anti-inflammatory, and neuroprotective properties. These findings suggest that traditional Unani approaches may complement contemporary holistic strategies in geriatric care by promoting physiological resilience, cognitive health, and overall wellbeing [42].

Promoting psychological wellbeing and protecting adolescents from adverse experiences and risk factors that may impact their potential to thrive are critical for their wellbeing during adolescence and for their physical and mental health in adulthood.

Best Integrative Practices for Ayush/Unani

Best integrative practices in Unani medicine for mental and lifestyle disorders prioritize holistic balance through ‘*Ilāj bi’l Tadbīr* (regimenal therapy), ‘*Ilāj bi’l Ghidhā*’ (dietotherapy), and safe adjunctive use alongside conventional treatments. Regimenal interventions such as *Naṭūl* (douche), *Tadhīn* (oiling), and *Dalk* (therapeutic massage) have been reported to improve insomnia and stress-related sleep disturbances without the adverse effects typical of conventional hypnotic drugs. Controlled clinical evidence further supports the use of polyherbal Unani formulations, such as *Majoon Najah* in reducing anxiety and depressive symptoms in mixed anxiety-depressive disorder (MADD), indicating potential as a complementary approach in mental healthcare.

In Unani medicine, *Mundij Mushil* (concoctive-purgative) therapy constitutes a key detoxification strategy aimed at correcting humoral imbalance. This regimen facilitates gentle elimination of metabolic wastes, alleviates gastrointestinal stagnation, and restores systemic equilibrium. Clinical and classical Unani texts highlight its utility in managing chronic lifestyle and mental disorders, obesity, and geriatric conditions, with observed benefits including bowel regularity, metabolic homeostasis, and mental clarity. As a best integrative practice, *Mundij*

Mushil (concoctive-purgative) therapy may be implemented alongside conventional dietary management and lifestyle interventions to enhance detoxification safely and holistically.

In Unani medicine, '*Ilāj bi'l Ghidhā*' (dietotherapy) forms a cornerstone in managing obesity, diabetes, cancer, and geriatric conditions, emphasizing caloric moderation, low-glycaemic foods, and easily digestible, nutrient-dense diets. For mental health, Unani dietotherapy favors light, nourishing, and mood-stabilizing foods that support cerebral function, reduce stress, and help maintain emotional balance. Dietary restrictions commonly include avoidance of excess refined sugars and sweets (to prevent deranged humoral metabolism), limitation of fatty and fried foods (to reduce obesity-related imbalance), and restriction of heavy, flatulent, or highly processed foods in elderly and cancer patients. Dietary recommendations emphasize whole grains such as barley (*Sha 'īr*), light proteins including pulses and lean meats, and antioxidant-rich fruits and vegetables, such as pomegranate and leafy greens, selected according to individual temperament (*Mizāj*) to improve metabolic regulation, reduce oxidative stress, support immunity, and promote healthy ageing. As a best integrative practice, these dietary interventions may be implemented alongside conventional nutritional counseling and medical management to enhance therapeutic efficacy, safety, and patient-centered care [21, 22, 23].

5. Current Limitations and Research Gaps

Significant progress has been made in generating scientific evidence on the safety and efficacy of Ayush interventions. However, despite growing interest in Ayush and Unani medicine, substantial limitations and research gaps continue to constrain the strength and generalizability of evidence supporting their applications in mind and body health.

Several clinical studies on Ayush formulations and therapies exhibit methodological limitations, including a paucity of randomized controlled trials, small sample sizes, lack of multicentric study designs, inadequate randomization and controls, and insufficient long-term follow-up data, all of which reduce confidence in conclusions regarding efficacy and safety. Moreover, variability in dosage forms, inconsistencies in raw material quality, and the lack of standardized manufacturing practices often contribute to variations that may impact the observed therapeutic outcomes [98].

A major challenge for integrative health solutions has been the lack of standard treatment guidelines. However, CCRUM has addressed this and actively worked to harmonize and standardize treatment approaches in Unani medicine by publishing the following standard treatment guidelines and SOPs, providing a credible evidence-based foundation for standardized clinical practice and integrative healthcare.

- Standard Unani Treatment Guidelines for Common Diseases – Volume I (covers protocols for common diseases based on classical Unani principles)
- Standard Unani Treatment Guidelines for Common Diseases – Volume II (expands on Volume I and includes lifestyle-related conditions such as diabetes and hypertension)
- Standard Treatment Guidelines for Musculoskeletal Disorders in Unani Medicine (developed under the Ayush Vertical initiative and published to standardize the management of musculoskeletal conditions)
- Standard Operating Procedures (SOPs) for *Hijāma* (Cupping Therapy) (guidelines to ensure safe and consistent clinical practice of *Hijāma*)

- Standard Treatment Guidelines on Management of Metabolic Disorders in Unani System of Medicine (developed under the Ayush Vertical initiative and published to provide structured guidance on the management of metabolic disorders in Unani system of medicine), providing a valuable foundation for standardized care.

The individualized nature of traditional practices and complex polyherbal formulations pose inherent challenges to standard Randomized Controlled Trial (RCT) frameworks and placebo control design, making rigorous evaluation difficult [99]. Additionally, issues of dosage form variability and quality control, together with the limited indexing of Ayush research in major scientific databases, restrict visibility and international acceptance of published evidence [100]. There is also a significant gap in systematic documentation of adverse events and herb-drug interactions, particularly in integrated care settings, underscoring the need for standardized research protocols and enhanced pharmacovigilance [101].

6. Future Direction

Strengthening Clinical Evidence through Well-designed RCTs

To advance Unani medicine, well-designed randomized controlled trials (RCTs) and high-quality clinical studies should be conducted to rigorously evaluate the safety and efficacy of Unani interventions for specific indications, including mind-body and lifestyle-related health conditions such as stress, anxiety, depression, cancer, and neuroendocrine and metabolic disorders.

Standardization and Quality Control of Unani Formulations

The standardization of Unani drugs and polyherbal formulations using modern analytical methods is a fundamental research need to ensure consistency, reproducibility, and safety across studies. Integrating classical pharmacopeial knowledge with contemporary quality control techniques will facilitate regulatory approval and enhance the global recognition of Unani therapeutics.

Mechanistic and Translational Research

Future Unani research should prioritize mechanistic studies to elucidate the biological effects of traditional multi-component Unani therapies at molecular and cellular levels. This approach will bridge the conceptual gap between foundational Unani principles (e.g., temperament and humoral theory) and contemporary biomedical frameworks, thereby facilitating translational pathways for the integration of Unani interventions into mainstream healthcare. In this direction, the Central Council for Research in Unani Medicine (CCRUM) is actively working toward strengthening evidence generation and is conducting focused research on the fundamental principles of Unani medicine.

Interdisciplinary Integration with Modern Science

The integration of Unani medicine with contemporary biomedical research, such as psycho-neuro-immunological models and nutraceutical approaches, represents a pivotal direction for future research. Emerging domains, including the application of nanotechnology to Unani formulations, illustrate that classical Unani therapeutic principles can synergize with advanced technologies to create innovative, evidencebased Unani interventions.

Research Capacity and Education Reform

Strengthening research infrastructure, education, and training within Unani institutions will equip practitioners, academicians, and scientists to undertake cutting-edge research. Proposed reforms include structured academic programs that integrate Unani medicine principles with modern research methodologies, thereby enhancing the discipline's capacity to generate high-impact scientific evidence. Particular emphasis should be placed on motivating and empowering Unani practitioners and academicians, who are currently underrepresented in clinical research activities, to actively participate in evidence generation and clinical studies. In this direction, the National Commission for Indian System of Medicine (NCISM) has initiated important steps by introducing a competency-based, dynamic curriculum with strengthened components of research methodology.

Digital Health and Global Integration

Digital innovations, including electronic databases of classical manuscripts, tools that provide evidence-based guidance for clinical decision-making, and telemedicine platforms, are emerging as key enablers for research dissemination and global engagement. Leveraging these technologies can broaden access to the knowledge of the Unani system of medicine and facilitate international collaborations, thereby aligning traditional Unani practice with contemporary healthcare delivery paradigms.

Policy Driven Frameworks and International Recognition

Ongoing global initiatives, such as the World Health Organization's inclusion of Unani medicine in international classification systems and its publication, in collaboration with the Ministry of Ayush, of *WHO Benchmarks for the Training of Unani Medicine*, *WHO Benchmarks for the Practice of Unani Medicine*, and *WHO International Standard Terminologies on Unani Medicine*, along with the *Orientation Guidelines for Community Health Officers (Unani Stream)* published by the Ministry of Ayush, Government of India, underscore the importance of policy-level support for research and standardization. These frameworks provide a roadmap for integrating Unani medicine into global health strategies and ensuring that its contributions are evaluated alongside other evidence-based therapies.

7. Conclusion

Unani medicine offers a comprehensive and integrative framework for promoting mind-body health through its emphasis on holistic lifestyle regulation, individualized therapeutics, and the strengthening of intrinsic healing mechanisms. Traditional Unani interventions, including dietotherapy, regimenal therapies, and evidence-based pharmacological formulations demonstrate potential benefits in addressing stress-related disorders, chronic diseases, and psychosomatic conditions. Emerging scientific studies further support the antioxidant, immunomodulatory, neuroprotective, brain and nervine tonic, brain stimulant, brain-calming, exhilarants, and adaptogenic properties of several Unani interventions. Strengthening the evidence base through high-quality RCTs across mental and lifestyle disorders, standardization and quality control of Unani formulations, integrative mechanistic studies linking Unani principles with contemporary biomedical pathways, and longitudinal outcome and safety evaluations will support policy-level integration and enable the responsible incorporation of Unani approaches into contemporary healthcare systems, thereby contributing meaningfully to preventive, promotive, and integrative healthcare.

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Siddha

Interventions for Mind and Body Health

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Executive Summary

Global Imperative for Mind–Body Health

The contemporary global health landscape is defined by a critical epidemiological shift. Non-Communicable Diseases (NCDs) now account for approximately 75% of global deaths, claiming 43 million lives annually, while nearly 1 billion people live with mental health disorders.[1, 2] The distinction between physical and mental ailments is increasingly blurring; chronic metabolic conditions like diabetes and hypertension are deeply intertwined with psychosocial stress, creating a cycle of “mind-body” dysregulation that conventional reductionist models struggle to address effectively.[2, 3] Addressing this crisis requires a paradigm shift from disease management to holistic health creation.

Relevance of Siddha System

In this context, the Ayush systems, particularly Siddha system, offer a timely and relevant solution. Siddha utilizes a bio-energetic framework (Mukkutram) that views the mind and body as an indivisible continuum. This system is uniquely positioned to bridge gaps in global health by offering preventive strategies and addressing the fragmentation of mental and physical health services.[4] This system is uniquely positioned to bridge the gaps in conventional care—specifically the lack of preventive strategies and the fragmentation of mental and physical health services. With the World Health Organization advocating for the integration of traditional medicine to achieve Universal Health Coverage, Siddha’s emphasis on *Kayakarpam* (rejuvenation) and *Varmam* (vital points) provides cost-effective, scalable tools for global health systems.[5, 6]

Key Interventions and Clinical Outcomes

This white paper synthesizes emerging clinical evidence validating Siddha interventions across critical health domains:

- **Mental Health & Addiction:** Clinical studies demonstrate that Siddha protocols using Amukkara Chooranam and Inji Rasayanam can effectively manage Alcohol Withdrawal Syndrome, reducing CIWA-Ar scores from 12 to 0 without the use of benzodiazepines.[7, 8]
- **Metabolic Disorders:** Integrative management of Type 2 Diabetes, combining Siddha pharmacotherapy with Yoga, has shown statistically significant reductions in HbA1c and fasting blood sugar levels compared to conventional care alone.[9] Molecular docking studies further reveal that herbal formulations like Adathodai Chooranam possess potent ACE-inhibitory activity comparable to standard anti-hypertensive drugs.[10]
- **Geriatric and Palliative Care:** Non-invasive Varmam therapy has proven effective in managing geriatric stress urinary incontinence and osteoarthritis, offering a drug-free alternative for the elderly.[11, 12] In oncology, Siddha integrative palliative care has demonstrated 100% relief in bleeding control for fungating wounds, significantly enhancing patient comfort and dignity.[13]

Recommendations and Future Directions

To fully leverage Siddha medicine for global health, this document advocates for a strategic transition from traditional wisdom to evidence-based integration. Key recommendations include:

- **Standardization:** Rigorous adherence to WHO benchmarks for training and safety, particularly regarding the toxicological profiling of herbo-mineral preparations.[14, 15]
- **Integrative Models:** The establishment of co-located integrative clinics, modeled after successful COVID-19 and NCD protocols, to facilitate cross-referral and comprehensive care.[16, 17]
- **Research Prioritization:** A shift towards large-scale, multi-centric Randomized Controlled Trials (RCTs) to generate high-grade evidence for inclusion in global clinical practice guidelines.[18, 19]
- **Application of AI technology** in the digitalisation and translation of Siddha ancient text to overcome the language barrier and towards globalization.

By harmonizing ancient insights with modern scientific rigor, Siddha medicine stands poised to offer a sustainable, holistic pathway to alleviating the modern burden of disease.

1. Introduction

Current Burden of Mental and Lifestyle Disorders

Global health in the 21st century is undergoing a profound epidemiological transition—from infectious diseases to a dominant burden of non-communicable diseases (NCDs) and mental health disorders. According to the World Health Organization (WHO, 2024), NCDs account for nearly 75% of all non-pandemic-related global deaths, resulting in approximately 43 million deaths annually.¹ Alarmingly, almost 18 million of these deaths occur prematurely, before the age of 70, with 82% affecting low- and middle-income countries, underscoring deep global inequities.²

Cardiovascular diseases, cancers, chronic respiratory diseases, and diabetes form the core of the NCD burden. Parallel to this, mental health disorders have reached crisis proportions. In 2021, nearly one billion people worldwide lived with a mental disorder, predominantly anxiety and depression.¹ Suicide continues to claim over 700,000 lives each year, while mental illnesses contribute substantially to years lived with disability (YLD), affecting one in seven people globally.³ The economic cost is staggering, with depression and anxiety alone causing an estimated US\$1 trillion annual loss in productivity, linking mental wellbeing directly to economic stability.³

Importantly, the boundaries between mental and lifestyle disorders are increasingly blurred. Shared behavioral risk factors—poor diet, physical inactivity, tobacco use, and harmful alcohol consumption—drive metabolic dysfunction while simultaneously arising from psychological distress.² Chronic stress and anxiety, for instance, worsen hypertension, which already affects 1.3 billion adults globally, creating self-reinforcing cycles of mind–body dysfunction.¹ This burden reflects not isolated diseases, but a systemic crisis of psychosomatic imbalance.

Growing Global Interest in Integrative and Traditional Medicine

In response to these gaps^{3,4,5,6}, interest in Traditional, Complementary, and Integrative Medicine (TCIM) has surged worldwide. Patients increasingly seek personalized, holistic, and culturally resonant healthcare. Recognizing this shift, the WHO has encouraged the integration of evidence-based traditional medicine into national health systems as a pathway toward Universal Health Coverage (UHC).⁷

Integrative approaches emphasize whole-person care, patient empowerment, and minimally invasive interventions⁴. Systems such as Siddha are particularly relevant, as they have long conceptualized health through an inseparable mind–body framework—an idea only recently embraced in Western medicine.⁹

The global TCIM market continues to expand, with India's Ayush sector gaining significant economic and institutional support. Initiatives such as the WHO Global Centre for Traditional Medicine reflect growing international legitimacy.¹¹ Increasingly, patients are turning to these systems for chronic disease management—including diabetes, cancer supportive care, and mental health—seeking improved quality of life and fewer adverse effects.⁶

Purpose and Scope of this White Paper

This white paper presents a comprehensive, evidence-informed analysis of the Siddha System of Medicine and its relevance to integrated mind–body health. Siddha—originating in the Tamil regions of South India and among the world’s oldest medical systems—remains underrepresented despite its depth and clinical potential.

The paper aims to:

- Elucidate the Siddha theoretical framework, including the *96 Thathuvas* and *Mukkutram* (Three Humors), highlighting its intrinsic mind–body orientation.
- Synthesize contemporary evidence, reviewing clinical and observational studies on Siddha interventions for mental health, metabolic disorders, cancer palliative care, and geriatric wellbeing.
- Demonstrate integrative potential, showcasing models where Siddha and biomedicine have been successfully combined, including during the COVID-19 pandemic and in NCD care.
- Identify challenges and future directions, addressing gaps in research methodology, standardization, and global perception, while proposing strategies for wider adoption.

Intended for policymakers, researchers, clinicians, and international conference delegates, this white paper positions Siddha medicine as a credible, evidence-based contributor to global health—bridging ancient wisdom and contemporary healthcare needs.

2. Siddha Framework for Mind–Body Health

Siddha: Origins and Relevance

The Siddha system of medicine (Tamil: *Siddha Maruthuvam*) is attributed to the *Siddhars*, a lineage of ancient Tamil mystics, scientists, and philosophers who are believed to have attained spiritual perfection or “Siddhi.” The system is deeply rooted in the Dravidian culture of South India and is historically distinct from, though conceptually related to, Ayurveda. Sage Agathiyar is revered as the founding father of Siddha medicine, alongside 18 other prominent Siddhars who contributed to its vast pharmacopoeia and philosophical tenets.¹⁴

The relevance of Siddha to contemporary mind-body health lies in its fundamental objective: the preservation of the body (*Kayam*) to facilitate the evolution of the soul. Siddha asserts that a healthy, robust body is the only vehicle through which spiritual perfection and mental clarity can be achieved. This philosophy led to the development of unique rejuvenation therapies known as *Kayakarpam* and a sophisticated branch of alchemy involving mercury and minerals (*Rasa Shastra*), aimed at arresting degeneration and promoting longevity.¹⁵

In the modern context, where psychosomatic disorders are prevalent, Siddha offers a framework that does not separate “mental health” from “physical health.” Instead, it views them as manifestations of the same bio-energetic forces. The system’s relevance is further underscored by its emphasis on *Varmam* (vital points), a non-invasive therapy that manipulates the body’s energy channels to treat neurological and psychological conditions, offering a low-cost, high-impact solution for global health systems.¹⁷

Conceptualizing Mind–Body Integration: the Bio–Energetic Model of Siddha

Siddha operates on a “bio-energetic model” centered on the equilibrium of the microcosm (*Pindam*) and the macrocosm (*Andam*). The central tenet is that the human body is a miniature representation of the universe, composed of the same five basic elements (*Pancha Bootham*): Earth, Water, Fire, Air, and Space. Health is defined as the dynamic balance of three humors (*Mukkutram*)—*Vatham*, *Pitham*, and *Kabam*—which are the physiological manifestations of these elements.¹⁹

Table 1: Siddha Conceptual Frameworks⁴

Feature	Siddha System
Core Ontology	Holistic; focuses on systemic balance (<i>Mukkutram</i>) and elemental composition (<i>Pancha Bootham</i>).
Mind-Body Relation	Integrated/Monistic; The mind (<i>Manam</i>) is one of the 96 <i>Thathuvas</i> and is intrinsically linked to physical humors.
Etiology	Derangement of humors due to diet, lifestyle, fate/destiny, and environmental changes.
Diagnostic Focus	Qualitative assessment of Constitution (<i>Udalkattu</i>), Pulse (<i>Naadi</i>), Urine (<i>Neerkuri</i>), and Eyes (<i>Vizhi</i>).
Therapeutic Goal	Restoration of humoral balance, rejuvenation (<i>Kayakarpam</i>), and spiritual liberation (<i>Veeduperu</i>).
Treatment Modalities	Herbal/Herbo-mineral formulations, <i>Varmam</i> (vital points), <i>Yoga</i> , Diet (<i>Pathiyam</i>), Alchemy.

This table highlights that Siddha provides a more comprehensive framework for understanding the “illness experience” and the interplay between a patient’s mental state, lifestyle, and physical health. In Siddha, a mental emotion like anger is not just a psychological state but a manifestation of increased *Pitham* (Fire/Heat); thus, it is treated not just with counseling but with cooling foods and herbs that pacify the *Pitham* humor, demonstrating true mind-body integration.

3. Conceptual Foundations for Mind-Body Health

The 96 Thathuvas: the Anatomy of Existence

The theoretical bedrock of Siddha medicine is the concept of the **96 Thathuvas** (Basic Principles). These are not merely anatomical structures but the fundamental building blocks of human existence, encompassing physical, physiological, psychological, and intellectual components. Understanding the *Thathuvas* is essential to grasping how Siddha views the mind-body continuum.¹⁹

The 96 Thathuvas classify the human being into a complex system of interacting parts:⁶⁷

- **Pancha Bootham (5 Elements):** Earth, Water, Fire, Air, Space. These form the physical sheath and determine the properties of drugs.
- **Pori (5 Sense Organs):** Eyes, Ears, Nose, Tongue, Skin.
- **Pulan (5 Sense Perceptions):** Vision, Hearing, Smell, Taste, Touch.
- **Kanmendriyam (5 Motor Organs):** Mouth, Hands, Legs, Genitals, Anus.

- **Anthakaranam (4 Intellectual Faculties):** This is the core of the Siddha psychological framework.
 - *Manam* (Mind): The thinking faculty, responsible for cognition and emotion.
 - *Buddhi* (Intellect): The deciding faculty, responsible for discrimination and judgment.
 - *Ahankaram* (Ego): The sense of “I-ness” or self-identity.
 - *Chittam* (Will/Memory): The storehouse of impressions and the seat of consciousness.¹⁹
- **Arivu (1 Wisdom):** The higher self or self-realization.
- **Nadi (10 Vital Channels):** Energy pathways including *Idakalai* (Moon/Left), *Pingalai* (Sun/Right), and *Suzhumunai* (Central).
- **Vayu (10 Vital Airts):** *Pranan* (Life force), *Abanan* (Excretion), *Uthanan* (Speech), etc.
- **Kosam (5 Sheaths):** Physical, Mental, Respiratory, Intellectual, Blissful.
- **Mukkutram (3 Humors):** *Vatham*, *Pitham*, *Kabam*.

Siddha system recognizes ‘8 passions’ (e.g., desire, malice, lust, ego etc) as triggers for disease. Modern medicine shows how emotions impact cardiovascular, endocrine, and immune systems. ‘Manam, Buddhi, Sitham, Ahangaram’ (mind faculties) are central to Siddha psychology.

EIGHT PASSIONS (A compendium of siddha doctrine):

Kamam	Sexual desire (lust)
Kurodham	Hatred, malicious hatred
Lopam	Misery
Mokam	Lust (infatuation)
Madham	Rut
Maacharyam	Envy
Idumbai	Suffering affliction
Ahangaram	Ego

This exhaustive categorization illustrates that in Siddha, the “Mind” (*Manam*) is explicitly linked to biological functions through the *Thathvas*. For instance, *Pranan* is a type of *Vayu* (Air) that governs respiration. Since *Vayu* is a component of the *Vatham* humor, any disturbance in *Vatham* (caused by food or weather) directly agitates the *Pranan*, which in turn destabilizes the *Manam* (Mind), leading to anxiety. This mechanistic link allows Siddha practitioners to treat mental disorders through physical interventions that stabilize the humors.¹⁹

Siddha system, emphasizing its holistic, elemental, and mind–body–spirit framework. Siddha medicine views the human body as a microcosm of the universe, governed by five elements (Pancha Bhootham) and three humors (Mukkutram – *Vatham*, *Pitham*, *Kabham*).

There are three major types of medicine:

- *Avizhtha Maruthuvam* – medicines that counteract the diseases of gross body which consists of 25 *Thathvas* (*Bhootham* – 5, *Pori* – 5, *Pulan* – 5, *Kanma* & *Nyana indhriyam* – 10)
- *Manthira Maruthuvam* – medicines that counteract the diseases of subtle body which consists of 35 *Thathvas* (*Anthakaranam* – 4, *Arivu* – 1, *Naadi* – 10, *vaayu* – 10, *Aasayam* – 5, *Kosam* – 5)

- *Mani Maruthuvam* – medicines related to subtle energy, spiritual refinement, and longevity which consists of 36 *Thathvas* (*Aadharam* -6, *Mandalam* – 3, *Malam* – 3, *Thodam* – 3, *Edanai* -3, *Gunam* – 3, *Vinai* – 2, *Raagam* – 8, *Avathai* - 5) This *Thathvas* is attributed for the psychosomatic disorders developments when deranged.

The Mukkutram (Tri-Humoral) Theory

The health of an individual is determined by the equilibrium of the *Mukkutram*—the three bio-energetic forces. Each humor has specific physical and psychological attributes:

1. Vatham (Air + Space):

- *Physical*: Governs movement, the nervous system, respiration, and elimination.
- *Psychological*: Governs enthusiasm, creativity, speed of thought, and sensory perception.
- *Pathology*: Aggravation leads to anxiety, fear, insomnia, tremors, and pain.¹⁹

2. Pitham (Fire + Water):

- *Physical*: Governs metabolism, digestion, thermoregulation, and vision.
- *Psychological*: Governs intelligence, courage, determination, and memory.
- *Pathology*: Aggravation leads to anger, aggression, delirium, mania, and burning sensations.¹⁹

3. Kabam (Earth + Water):

- *Physical*: Governs structure, stability, lubrication of joints, and strength.
- *Psychological*: Governs patience, forgiveness, compassion, and stability.
- *Pathology*: Aggravation leads to lethargy, depression, attachment, greed, and excessive sleep.¹⁹

In Siddha diagnostics, the specific derangement of these humors is identified through *Naadi* (pulse reading). A “Vatha” pulse might indicate anxiety, while a “Pitha” pulse could suggest stress-induced hypertension. The text *Manidhakkirugai nool* – 64 describes psychiatric conditions (*Kirigai*) by correlating specific behavioral symptoms with these humoral imbalances, providing a bio-psycho-social classification of mental illness.²³

Siddha and Energy Science

According to Sindhuja et al., (2004), Rooted in South Indian tradition, Siddha conceptualizes health as the harmonious flow of vital energy (*prana*) through energy channels (*nadis*) and points (*marmas*), with disease arising from energetic imbalances influenced by emotional, psychological, and lifestyle factors. The paper situates Siddha energy healing within a global historical context, drawing parallels with practices such as Reiki, acupuncture, pranic healing, and therapeutic touch. It highlights clinical observations and case reports suggesting benefits in pain management, stress reduction, chronic diseases, and quality of life, particularly when used as a complementary therapy. Despite increasing acceptance, the authors acknowledge significant challenges, including limited scientific validation, lack of standardization, and skepticism within mainstream medicine. The review concludes that integrating Siddha energy healing with conventional care holds promise for advancing integrative and preventive healthcare, warranting rigorous multidisciplinary research.⁶⁹

**Yama and Niyama, countless are their virtues.
Pranayama flows with grace and discipline.
Dharana, Dhyana, and Samadhi bring stillness profound
These together form the noble Eightfold Path.**

Thirumanthiram poem 552.

The *Attanga Yoga* (Eightfold Path) of the Siddhars is a comprehensive spiritual framework designed to harmonize the body, mind, and soul, leading to enlightenment. Rooted in ancient wisdom, it emphasizes disciplined practices for self-realization and liberation. The eight stages are:

1. ***Theethu agattral or Iyamam***: Ethical restraints or universal moral principles, such as non-violence and truthfulness.
2. ***Nandru aattral or Niyamam***: Personal disciplines like cleanliness, contentment, and self-study.
3. ***Irukkai or Aasanam***: Physical postures that prepare the body for meditation and promote health.
4. ***Vali nilai or Pranayamam***: Breath control techniques to regulate Prana
5. ***Thogai nilai or Prathiyakaaram***: Withdrawal of the senses to focus inward and detach from external distractions.
6. ***Porai nilai or Dhaaranai***: Concentration or focused attention on a single point or object.
7. ***Ninaitthal or Thiyanam***: Deep meditation for unbroken awareness of the divine.
8. ***Nosippu or Samaadhi***: The ultimate state of spiritual absorption and union with the universal consciousness.

The Siddhars viewed *Attanga Yogam* as a holistic path, not only for spiritual growth but also for physical and mental wellbeing, making it an essential part of their teachings

4. Evidence Landscape: Clinical Research and Global Studies

The integration of Siddha medicine into global healthcare frameworks is increasingly supported by clinical research. This section synthesizes the evidence supporting Siddha interventions across mental wellbeing, lifestyle disorders, and specialized care, demonstrating its transition from traditional wisdom to evidence-based practice.

Siddha Perspective for Happiness Index

The concept of “Happiness” in Siddha transcends the hedonic definition of temporary pleasure. It aligns with the ancient Indian concept of *Sukha* (wellbeing) and *Ananda* (bliss), which arise from a state of humoral balance and mental clarity (*Sattva*). Siddha literature posits that *Inbam* (Happiness) is the natural result of *Noyi Inmai* (Absence of Disease) and the proper functioning of the *Manam* (Mind).²⁴

According to Chockalingam A et al.,(2022) a descriptive case series found that Siddha self-inquiry-based Hunger Gratitude Experience (HUGE) mindfulness practice in four complex cardiovascular disease patients was associated with improved optimism, emotional resilience, lifestyle transformation, weight loss, symptom relief, and enhanced quality of life, suggesting potential mind-body benefits despite absence of controlled trials⁷⁰.

Research into subjective wellbeing (SWB) using Indian knowledge systems indicates that practices aligning with *Sattva* (mental purity) and *Dharma* (righteous living) correlate with higher SWB scores. A clinical study utilizing the WHO-QOL BREF scale demonstrated that participants undergoing traditional interventions, which included herbal immunomodulators like *Ashwagandha* (often used in Siddha as *Amukkara*) and lifestyle modifications, showed significant improvements in physical and psychological health domains compared to control groups. This suggests that Siddha interventions can objectively improve the quality of life metrics used in global happiness indices.²⁶

Furthermore, the Siddha practice of *Kayakarpam* (Rejuvenation) is directly linked to Happiness Index. *Kayakarpam* aims to delay aging, prevent greying (*Narai*) and shrinking (*Thirai*), and maintain youthfulness. By reducing the morbidity associated with aging and fostering *Seyarkai Vanmai* (acquired immunity), these therapies contribute to a sustained sense of vitality and wellbeing, which are core components of happiness.¹⁶ The use of antioxidant-rich herbs like *Emblica officinalis* (Amla) and *Ginger* in these formulations supports the biological basis for this enhanced wellbeing by reducing oxidative stress, a known factor in depressive states.²⁸

Siddha Interventions for Mental Wellbeing

Siddha medicine offers a rich pharmacopoeia and non-pharmacological therapies for managing common mental health disorders, addressing them as systemic imbalances rather than isolated brain chemical deficits.

Stress, Anxiety, and Depression

Depression (*Viyagula Unmatham*): A significant open clinical study evaluated the efficacy of the Siddha formulation *Thirutharakchatha Chooranam* (internal) and *Aruganver Thylam* (external oil application) in the treatment of depression. The study utilized the Hamilton Depression Rating Scale (HAM-D) to measure outcomes. The results indicated that **86.6% of patients** who received the combined therapy alongside *Yogam* (structured breathing and postures) reported significant clinical improvement. The integrative approach—combining internal medicine to balance humors, external oil to calm *Vatham*, and yoga to regulate the mind—proved superior to medication alone, validating the holistic Siddha protocol.³⁰

Anxiety (*Padhatram*): Anxiety is classically viewed as a *Vatham* disturbance affecting the mind channels. External therapies are pivotal here.³¹

Stress Management via *Varmam*: *Varmam* therapy, the manipulation of vital energy points, is a unique Siddha contribution to stress management. Research indicates that stimulating specific points such as *Thilantha Varmam* (center of the eyebrows) and *Kondaikolli* (crown of the head) can activate the parasympathetic nervous system. This stimulation leads to immediate relaxation, reduction in cortisol levels, and alleviation of tension headaches, offering a rapid, drug-free intervention for acute stress.³²

Alcohol Withdrawal and Addiction

Siddha views addiction as a severe derangement of *Ojas* (vital essence) and *Buddhi* (intellect). A landmark clinical study conducted at the National Institute of Siddha (NIS) developed a specific protocol for managing Alcohol Withdrawal Syndrome (AWS). The protocol included:

1. Inji Rasayanam: A ginger-based confection to improve digestion (*Agni*) and reduce nausea.
2. Amukkara Chooranam: A formulation containing *Withania somnifera* (Ashwagandha) acting as an adaptogen to reduce anxiety and tremors.
3. Brahmi Nei: Medicated ghee containing *Bacopa monnieri* to restore cognitive function and sleep.

Clinical Outcomes: The study reported remarkable efficacy. Patients treated with this Siddha protocol saw their CIWA-Ar (Clinical Institute Withdrawal Assessment for Alcohol) scores drop from a baseline of 12 (indicating moderate withdrawal) to 0 (nil) within 48 days.

Symptoms such as tremors, anxiety, agitation, and insomnia ceased completely. This study provides compelling evidence that Siddha interventions can serve as viable, non-addictive alternatives to benzodiazepines in de-addiction therapy, addressing both the physiological withdrawal and the neurological repair required for recovery.^{34,35,36,37}

Siddha Intervention for Lifestyle Disorders (NCDs)

Siddha medicine excels in managing chronic metabolic and lifestyle disorders through a combination of internal medicines and *Pathiyam* (rigorous dietary restrictions), addressing the root metabolic dysfunctions.

Metabolic Disorders: Diabetes Mellitus (*Madhumegam*)

Siddha classifies diabetes as *Madhumegam* or *Neerizhivu*. The etiology is linked to a sedentary lifestyle and the intake of *Kapham*-aggravating foods, leading to the derangement of the seven bodily tissues (*Udal Thathukkal*).

Clinical Efficacy: A randomized controlled trial (RCT) evaluated the effect of an integrated module comprising Yoga and Siddha medicine on glycemic indices in type 2 diabetic patients. The study found statistically significant reductions in Fasting Blood Sugar (FBS), Post-Prandial Blood Sugar (PPBS), and Glycosylated Hemoglobin (HbA1c) levels in the integrated group. The integrated approach provided sustained glycemic control over a 4-month period, highlighting the synergistic benefit of combining physical movement (Yoga) with metabolic correctors (Siddha herbs).³⁸

Key Formulations: Standard treatment guidelines for *Madhumegam* recommend formulations like Aavarai Kudineer (Cassia auriculata decoction), Seenthil Chooranam (*Tinospora cordifolia*), and Madhumega Chooranam. *In vivo* and clinical studies have validated these herbs for their insulin-sensitizing properties, ability to inhibit alpha-glucosidase, and potential to regenerate beta-cells.³⁹ Additionally, Siddha emphasizes preventive care through specific yogic postures like *Kalappai Asanam* (Plough pose) and *Pavanamuktasana*, which mechanically stimulate the pancreas and improve visceral metabolism.⁴¹

Hypertension (*Raththa Kothippu*)

In Siddha, hypertension is often termed *Raththa Kothippu* or *Raththa Pitham*, attributing the cause to vitiated *Pitham* heating the blood (*Ratham*).

Molecular Mechanisms: Scientific validation of Siddha anti-hypertensive formulations has advanced to the molecular level. *In silico* docking studies of the formulation Adathodai Chooranam revealed that its bioactive compounds—specifically Vitexin, Rutin, and Luteolin—exhibit strong binding affinity to the active sites of the Angiotensin-Converting Enzyme (ACE). The binding energy indicated strong interaction with the target, suggesting that Siddha formulations can regulate blood pressure by effectively modulating the Angiotensin-Converting Enzyme (ACE).⁴² Other clinical studies on Vaasathi Kashayam (containing *Justicia adhatoda* and *Vitis vinifera*) have demonstrated efficacy in lowering systolic blood pressure by reducing oxidative stress and improving vascular endothelial function.⁴³

Cancer Care (*Integrative Oncology*)

Cancer (*Puttru*)

Based on the Standard Siddha Treatment Guidelines for Non-Communicable Diseases (NCDs)⁷¹, **Cancer (*Puttru*)** is identified as a fatal disease secondary only to cardiac diseases in developed countries. Within the larger context of these guidelines, the management of cancer follows a structured, stage-based protocol that emphasizes humoral balance, dietary restriction, and integration with modern intervention in advanced stages.

The following sections detail the Siddha perspective on cancer and its management as presented in the guidelines.

Pathogenesis and Etiology

The guidelines conceptualize cancer through the framework of *Thirithodam* (the three humours), specifically viewing it as a proliferation of tissues caused by intrinsic and extrinsic factors.

- **Humoral Derangement:** The disease process begins when *Vatham* becomes aggravated (“Paravukaal”), affecting the body’s tissues (*thathukkal*) and organs. This is followed by the derangement of *Kabham*, which leads to abnormal cellular behaviors: excessive growth (*Valarthal*), hypertrophy (*Kanaththal*), and increased cell division (*Pilaththal*).
- **Causes:** The guidelines attribute cancer to various lifestyle and environmental factors, including excessive intake of tubers, salt, sour foods, and non-vegetarian items. Other contributing factors include obesity, smoking, sexual indulgence, genetic predisposition, viral infections, and exposure to radiation or chemical dyes.

Staged Clinical Management

Consistent with the Siddha approach to other NCDs, cancer management is categorized by the severity of the tumor’s spread (Stages I–IV). The primary therapeutic goal across early stages is the neutralization of humours.

- **Foundational Therapies:** For Stages I, II, and III, the treatment protocol mandates **Purgation** and **Oleation**. This aligns with the general Siddha NCD strategy (also applied in Cardiac and Diabetic protocols) of detoxifying the system to restore humoral balance.
- **Stage-Specific Interventions:**

- **Stages I & II:** Treatment focuses on containing the tumor (Stage I) or managing local spread (Stage II) using internal and external medicines alongside purification therapies.
- **Stage III:** As the cancer spreads to surrounding tissues and lymph nodes, the treatment regimen intensifies to include specific external therapies such as **Attai Vidal** (Leech therapy) and **Pugai** (Fumigation).
- **Referral Criteria (Stage IV):** The guidelines explicitly define Stage IV as a referral criterion. Patients exhibiting severe symptoms—such as complete loss of consciousness, noisy breathing, refusal to eat/drink, or metastasis—are referred for modern treatments like chemotherapy, radiation, or surgery.

Dietary and Lifestyle Regimen

The guidelines prescribe a strict **1800-calorie diet plan** designed to support treatment and purification.⁷¹

- **Recommended Diet:** Patients are advised to consume wheat grass juice, tender coconut water, and warm milk without sugar in the mornings. Other recommendations include ash gourd juice, *Arugam* juice, and functional foods like garlic, onion, and unpolished rice.
- **Prohibited Items:** The diet strictly forbids oily foods, ghee, eggs, pickles, dry fish (specifically noting aromatic hydrocarbons), and spicy foods.
- **Therapeutic Lifestyle:**
 - **Baths:** Hip baths, sun baths, and mud baths (specifically for breast cancer) are recommended.

Yoga: Specific *Asanas* are prescribed, including *Pujangasanam*, *Dhanurasanam*, and *Naadi sudhi* (nerve purification).

Palliative Efficacy: A study conducted at a rural hospital in North Eastern India focused on integrative care for patients with advanced fungating breast cancer. The integration of traditional palliative nursing protocols resulted in 100% relief in bleeding control and a significant reduction in malodor and maggot infestation. This dramatically improved the “comfort score” and dignity of terminally ill patients, facilitating better compliance with other necessary treatments.⁴⁴

Clinical Profile: A retrospective cross-sectional study of 1131 cancer patients attending the Siddha Cancer Special OPD at the National Institute of Siddha revealed high utilization rates for palliative support. The study found that patients with advanced malignancies (metastasis present in 18% of new cases) frequently sought Siddha care for symptom management when conventional options were exhausted or caused intolerable side effects.⁴⁵

Specific Formulations: High-order Herbo-mineral formulations like *Rasagenthi Mezhu* and *Kalamegha Narayana Chendooram* are central to Siddha oncology. Preclinical studies have demonstrated their anti-proliferative and apoptotic effects on cancer cell lines (e.g., HeLa, MCF-7), validating their traditional classification as *Putru* (cancer) curative agents. Integrative protocols also utilize immunomodulators like *Amukkara Chooranam* to mitigate the myelosuppression and fatigue associated with chemotherapy, supporting the patient’s biological resilience.⁴⁷

Geriatric Care and Varmam Therapy

Siddha Geriatrics (*Moopu*) focuses on maintaining functional independence and managing age-related degeneration.

Stress Urinary Incontinence: Urinary incontinence is a major geriatric issue often treated surgically. An open clinical trial evaluated the efficacy of Varmam therapy (pressure point manipulation) for geriatric patients with stress urinary incontinence. The stimulation of specific points such as *Kumbaga Mudichu* and *Pinkannadi Kaalam* significantly reduced the frequency of urinary leakage. The therapy works by strengthening the pelvic floor muscles through bio-energetic stimulation, offering a non-invasive, cost-effective alternative for the elderly.¹⁷

Osteoarthritis: Chronic pain management in the elderly is challenging due to the risks of NSAIDs. Studies on *Varmam* therapy combined with external *Thokkanam* (massage) for knee osteoarthritis have shown significant reductions in pain scores and improvements in range of motion. This drug-free approach addresses the mechanical and energetic blockages causing pain (*Vatha* stagnation), enhancing quality of life without gastrointestinal or renal toxicity.⁵⁰

Pediatric Care

Siddha Pediatrics (*Kuzhandai Maruthuvam*) prioritizes innate immunity.

Urai Mathirai: This is a traditional polyherbal tablet administered to infants to prevent infections. Scientific analysis has confirmed its analgesic and anti-inflammatory potential in preclinical models. The formulation, which includes ingredients like garlic, ginger, and long pepper, acts as a potent immunomodulator. It is widely used to prevent recurrent respiratory infections and “primary complex” (early tuberculosis) in children, serving as a prophylactic shield in the critical early years of development.⁵²

Child care in Siddha (*Kuzhandai Maruthuvam*) emphasizes immunity enhancement, digestive balance, and neurodevelopmental growth through nutrition and simple herbal formulations. One such traditional preparation is *Panjamutti Kanji*—a fortified herbal porridge containing five nutritive components: rice, green gram, pepper, dry ginger, and long pepper. It is traditionally administered to infants and children to enhance digestion, boost immunity, and prevent recurrent infections.⁷²

Best Collaborative Clinical Practices for Siddha

The successful integration of Siddha with biomedicine requires structured, evidence-based protocols that leverage the strengths of both systems.

The RAN protocol—comprising *Rasagandhi Mezhu*, *Amukkara Choornam*, and *Nellikai Lehyam*—demonstrates significant clinical efficacy in Siddha-based HIV management. Studies conducted at the Tamparam Sanatorium and the National Institute of Siddha reported marked improvements in immune parameters, including increased CD4 counts and reduced viral loads in over 60% of patients. The therapy exhibits immunomodulatory and adaptogenic properties with notable symptomatic relief, weight gain, and no adverse effects. When used adjunctively with antiretroviral therapy (ART), RAN enhances tolerance and improves quality of life (Deivanayagam et al., JAPI, 2001).

The Amma Magapperu Sanjeevi Kit, a Tamil Nadu government initiative, integrates eleven trimester-specific Siddha formulations into routine antenatal care. It effectively addresses nausea, anemia, constipation, and gestational stress, promoting healthy pregnancies and reducing miscarriage rates. Clinical evaluations indicate improved maternal and neonatal outcomes when integrated with allopathic monitoring, underscoring Siddha's capacity to complement modern obstetric care (Arthi et al., IRJAY, 2022).

The COVID-19 Success Story: During the COVID-19 pandemic, the National Institute of Siddha and the Government of Tamil Nadu implemented a pioneering integrative protocol. A documented case report of a moderate COVID-19 patient (with elevated inflammatory markers like CRP and D-Dimer) treated with Kabasura Kudineer alongside conventional supportive care showed rapid clinical recovery and normalization of lab parameters. This stratified protocol utilized Siddha formulations for immunity and symptom management alongside standard critical care support. This model proved highly effective, reducing mortality and hospitalization times. It serves as a blueprint for managing future infectious disease outbreaks.⁵⁵

Diabetes Integrated Management: A “Customized Integrated Management” protocol for diabetes recommends using Metformin as the primary pharmacological agent for glycemic control, supplemented with Siddha herbs like *Aavarai* to delay disease progression and *Varmam* therapy to manage complications such as adhesive capsulitis (frozen shoulder). This approach addresses the metabolic defect while simultaneously managing the neuromuscular complications that biomedicine often struggles to treat effectively.⁴⁰

Current Limitations and Research Gaps in Siddha

Despite the promising evidence base, the global acceptance and integration of Siddha medicine face several systemic challenges that must be addressed to elevate its status in the international scientific community.

- 1. Standardization of Herbo-Mineral Preparations:** A unique feature of Siddha is its extensive use of metals and minerals (e.g., mercury, sulfur, arsenic) in the form of *Bhasmas* and *Chendoorams*. While practitioners argue that purification processes (*Suddhi*) detoxify these elements, the presence of heavy metals creates significant regulatory hurdles globally. There is a critical gap in rigorous toxicological profiling using OECD guidelines for many classical formulations. Ensuring that these medicines meet international safety standards for heavy metal content is a prerequisite for global export and acceptance.¹⁵
- 2. Lack of Large-Scale Randomized Control Trials (RCTs):** Much of the existing evidence for Siddha comes from small sample size studies, open-label trials, or retrospective analyses. High-quality, multi-centric, double-blind RCTs—the gold standard of evidence-based medicine—are scarce. This lack of robust data makes it difficult to include Siddha interventions in global clinical practice guidelines or insurance coverage schemes.⁵⁹
- 3. Methodological Challenges in Research:** The personalized nature of Siddha diagnosis creates a conflict with the standardized “one-disease-one-drug” model of modern clinical trials. In Siddha, two patients with “migraine” might receive different treatments based on their *Udalkattu* (constitution) and humoral imbalance. Designing research protocols that

respect this holistic epistemology (e.g., “whole system” trials) while satisfying statistical rigor remains a significant methodological hurdle.⁵⁹

4. **Documentation and Translation:** A vast amount of Siddha knowledge remains locked in ancient Tamil palm leaf manuscripts that have not yet been digitized or translated into English. This linguistic barrier restricts access to the global scientific community and prevents the exploration of potentially novel therapeutic agents described in classical texts.¹⁵
5. **Perception and Awareness:** On the global stage, Siddha is often overshadowed by or conflated with Ayurveda. The distinct identity of Siddha—particularly its specialized branches like *Varmam* and *Alchemy*—is not well understood outside of Tamil Nadu and Sri Lanka. This lack of distinct branding hampers international funding and collaboration opportunities.⁶⁰

6. Future Direction

To position Siddha as a key player in global mind-body health, a multi-pronged strategic approach is required, involving policymakers, researchers, and practitioners.

1. **Adoption of WHO Benchmarks:** The World Health Organization has released benchmarks for training in traditional medicines. Siddha institutions must rigorously align their curriculum and practice standards with these global benchmarks. This will ensure the mobility of practitioners, standardize the quality of care, and provide a framework for international accreditation.⁷
2. **Establishment of Integrative Clinics and Centers of Excellence:** There is a need to replicate successful models like the Ayush-ICMR centers in AIIMS, where Siddha physicians work alongside biomedical doctors. Establishing such “Centers of Integrative Excellence” globally can generate Real-World Evidence (RWE) on the efficacy of combined protocols for NCDs and cancer. These centers can serve as hubs for cross-disciplinary research and training.¹²
3. **Scientific Validation of “Muppu” and “Kayakarpam”:** *Muppu* (the Universal Salt) is a legendary Siddha preparation believed to potentiate other medicines. Dedicated research into its chemical composition and catalytic properties could revolutionize drug delivery systems and antioxidant therapy. Similarly, high-end molecular research on *Kayakarpam* herbs for telomerase activity and cellular rejuvenation could position Siddha at the forefront of the booming global anti-aging and longevity market.¹⁶
4. **Globalization through “Varmam” Therapy:** *Varmam* therapy is a non-invasive, drug-free intervention that offers immediate results for pain and stress. Unlike internal medicines, it faces fewer regulatory barriers regarding safety. Promoting *Varmam* as a distinct global therapy—similar to how Acupuncture has been globalized—can serve as a “soft power” entry point, introducing the world to the broader principles of Siddha medicine.¹⁷
5. **Digital Health Integration:** Leveraging technology such as the “Ayush Grid” and Artificial Intelligence (AI) to document Siddha clinical outcomes is crucial. Creating a massive, standardized database of patient outcomes can enable data mining to identify patterns of efficacy that small trials might miss, building a robust evidence base for the system’s effectiveness in real-world settings.⁶⁶
6. **Implementation of National Medicinal Plants Board (NMPB) Guidelines for Cultivation and Standardization:** By integrating Good Agricultural Practices (GAP)

and Good Field Collection Practices (GFCP), the industry can ensure the production of high-quality, contaminant-free raw materials, while the Voluntary Certification Scheme (VCSMPP) provides the necessary framework for verifying purity and active ingredient potency. Leveraging digital platforms like e-Charak for knowledge exchange and utilizing National Ayush Mission subsidies will empower cultivators to scale the production of critical herbs such as Nilavembu and Amukkara sustainably. Ultimately, transitioning from traditional methods to these standardized, evidence-based cultivation protocols supported by robust post-harvest management will build the international trust required to integrate Siddha's holistic wisdom into the modern global medical landscape.

7. Conclusion

The Siddha system of medicine offers a profound, comprehensive framework for mind-body health that is increasingly relevant in an era burdened by chronic lifestyle disorders and mental health crises. Far from being a relic of the past, Siddha's theoretical foundations—the *96 Thathuvas*, *Mukkutram* physiology, and the intricate concept of *Manam*—provide a sophisticated model for understanding the psychosomatic unity of the human being. It bridges the dualism divide between mind and body, offering a therapeutic paradigm where physical health is the foundation for mental clarity and spiritual evolution.

The evidence synthesized in this report demonstrates that Siddha interventions are not merely palliative but possess potent therapeutic efficacy. From the molecular docking studies confirming the anti-hypertensive mechanisms of herbal formulations to the clinical trials validating *Varmam* therapy for geriatric incontinence, the system offers tangible, cost-effective solutions. Specifically, the success of integrative protocols in managing emerging conditions like COVID-19, alcohol withdrawal, and cancer palliative care highlights the synergistic potential of combining traditional wisdom with modern diagnostics and critical care.

However, realizing the full global potential of Siddha requires bridging the gap between ancient texts and modern research. It demands a steadfast commitment to rigorous standardization, safety evaluation, and large-scale clinical research. By embracing these challenges and fostering a culture of respectful integration, Siddha medicine can transcend its regional boundaries. It stands poised to become a cornerstone of a new, holistic paradigm in global healthcare—one that honors the wisdom of the *Siddhars* while utilizing the rigor of modern science to alleviate human suffering and promote enduring wellness.

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Homeopathy

Interventions for Mind and Body Health

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Executive Summary

The Global Imperative: Bridging the “Care Gap” The 21st century is defined by a critical epidemiological transition where mental health disorders and lifestyle-related Non-Communicable Diseases (NCDs) have become the leading causes of morbidity. While biomedical advancements excel in acute care, an urgent “care gap” remains for chronic, complex, and functional disorders. This white paper argues that, to address this challenge, Traditional, Complementary, and Integrative Medicine (TCIM) must transition from playing a minor adjunctive role to becoming a “central pillar” of modern medical strategy.

The Homeopathic Solution: From “Pill” to “System” Homeopathy offers a time-tested, personalized framework ideally suited to the WHO’s “One Health” and Universal Health Coverage goals. Grounded in the “Principle of Similars” and supported by modern concepts in Systems Biology and Psychoneuroimmunology (PNI), homeopathy treats the mind and body as an indivisible single entity. Crucially, this framework revives the Hahnemannian definition of the physician as a “Sustainer of Health”. It distinguishes between true chronic diseases and “pseudo-chronic” conditions driven by lifestyle errors (e.g., diet, stress), mandating that Lifestyle Modification (LSM) be a core curative agent alongside therapeutic prescribing.

Key Evidence & Impact Current evidence is beginning to challenge historical skepticism, with physicochemical research confirming that potentized medicines retain measurable nanostructures and solvent structuring distinct from pure water. Clinically, the framework is supported by rigorous data demonstrating efficacy, safety, and synergy:

- **Mental Health & Deprescribing:** The DEP-HOM study confirmed individualized homeopathy is non-inferior to Fluoxetine (Prozac) for moderate depression with a superior safety profile. Furthermore, the EPI3 study showed that patients treated by homeopathic GPs had a 71% lower probability of using psychotropic drugs while achieving similar outcomes.
- **Antimicrobial Resistance (AMR) & Stewardship:** Homeopathy functions as a vital antibiotic-sparing strategy, supported by a 2025 cohort study showing a 19% reduction in antibiotic risk and a 2024 meta-analysis on otitis media demonstrating a 46% decrease in filled prescriptions, highlighting its potential as a safe adjunct to support global antimicrobial stewardship.
- **Lifestyle Disorders (NCDs):** Integrative trials demonstrate that combining Homeopathy with Lifestyle Modification (LSM) or Yoga yields superior outcomes in “pseudo-chronic” conditions. This includes significant improvements in Hypothyroidism, Hypertension, and prevention of nasal polyp recurrence.
- **Oncology & Palliative Care:** Integrative Oncology models (e.g., Tuscany region, Italy and large-scale French studies) demonstrate that add-on homeopathy significantly reduces the side effects of chemotherapy/radiotherapy and improves Quality of Life.

Strategic Roadmap: 2025–2034

To operationalize this framework and align with the WHO Traditional Medicine Strategy 2025–2034, the following policy directions are proposed:

- **Revive “Pump-Priming” for Basic Science:** Allocate dedicated funding to resolve the “plausibility gap” by further investigating the physicochemical properties of ultra-dilutions.

- **Adoption of Whole System Research:** Shift the research focus to greater emphasis on “Pragmatic RCTs” and adaptive designs that evaluate the full clinical treatment package (consultation + remedy + lifestyle advice) in real-world settings, in addition to purely explanatory RCTs.
- **Integration of “Intra-Ayush” Protocols:** Formalize cross-referral protocols where Yoga provides the structural foundation, Ayurveda/Unani provide metabolic correction, and Homeopathy addresses constitutional susceptibility.
- **Economic & Green Validation:** Commission health economic studies assessing the impact of homeopathy in terms of associated cost-savings from “deprescribing” and promote homeopathy as a low-carbon, environmentally sustainable component of “Green Mental Health” policies.
- **Collaborating Nations, Data, and Science to Validate Homeopathy:** Advocate for targeted global research collaborations, multi country pragmatic clinical trials, evidence mapping, and data repositories specifically for homeopathy, to build international credibility and scientific validation.

Conclusion

Homeopathy is not merely a therapeutic system but a comprehensive framework for disease, lifestyle, and metabolic management. By moving the focus from treating disease labels to restoring the autoregulatory capacity of the patient, homeopathy offers a sustainable, scalable pathway to global “One Health”. This paper urges policymakers to commit to exploring the full potential of homeopathy, clarifying the benefits it could bring as a fully-integrated treatment option, within the pluralistic, patient-centric health systems needed for future global health.

1. Introduction

The 21st century faces a critical epidemiological transition where mental health disorders and lifestyle-related Non-Communicable Diseases (NCDs) have become the leading causes of morbidity and disability [1, 2]. While biomedical advancements have achieved remarkable success in managing acute trauma and infectious diseases, the rising burden of chronic, complex, and functional disorders indicates an urgent need for novel healthcare solutions. In parallel, there is growing global interest in Traditional, Complementary and Integrative Medicine (TCIM). As the potential of TCIM to treat such chronic ‘care gaps’ becomes increasingly evident, we are entering a period in which TCIM could (and arguably should) transition from a minor adjunctive element, to a central pillar of modern medical strategy. It is within this context that homeopathy, a therapeutic system established over two centuries ago by Samuel Hahnemann, offers a long-established, effective form of personalised medicine, ideally suited to supporting mind-body health today, and in decades to come.

Purpose

This white paper aims to create an Ayush Framework for Mind-Body Health, specifically for the homeopathic system of medicine. It explores the conceptual foundations, evidence landscape, and policy imperatives required to exploit the full potential of homeopathy as a key contributor to the attainment of “One Health” and Universal Health Coverage [2, 3].

2. Homeopathy Framework for Mind–Body Health

Homeopathy is a form of personalised, holistic medicine, with prescriptions based on consideration of all symptoms experienced by the patient – whether mental, emotional, and/or physical – across all body systems [4]. This therapeutic system is based on the ‘Principle of Similars’ whereby a substance which causes symptoms when given to healthy individuals, can be used to treat patients with those same, or similar, symptoms.

Homeopathic therapeutic agents are prepared by using a specialized manufacturing process involving serial trituration/dilution and succussion (vigorous shaking with impact) enabling use of minimal, non-toxicological dosages [6]. This process, termed Potentization (or Dynamization) is rigorously standardized in official pharmacopoeias such as the Homeopathic Pharmacopoeia of the United States (HPUS), the European Pharmacopoeia (Ph. Eur.), the German Homeopathic Pharmacopoeia (HAB), the French Pharmacopoeia (Ph. F) [6], and the Homoeopathic Pharmacopoeia of India (HPI) [7].

Homeopathy is practiced in 170 countries and recognized by the WHO as a key modality within the TCIM sector [8]. As the global definition of ‘health’ evolves from the mere absence of disease to a state of physical, mental, and social wellbeing, the homeopathic framework offers a time-tested model for achieving ‘wellness’ by strengthening the organism as a whole.

Conceptualizing Mind–Body Integration

Homeopathy posits that the mind and body form an indivisible continuum which – as in the field of psychoneuroimmunology (PNI) – must be considered as a whole. Further characteristic elements include:

- **Disease Perception:** Disease is not only a material entity caused by a pathogen or an altered biochemical mechanism but, fundamentally, it is the susceptibility of the system which needs to be addressed.
- **Diagnostic Protocol:** A patient-centered, holistic diagnostic approach focuses on understanding the individual’s unique physical, mental, and emotional symptoms rather than being focused solely on the disease label. This process aims to identify the “totality of symptoms” which determines selection of a highly individualized prescription [4].
- **Therapeutic Goal:** Homeopathic treatment aims to stimulate the body’s innate, self-regulatory, and defensive mechanisms to restore health, eradicating rather than suppressing symptoms.

3. Conceptual Foundations for Mind–Body Health

Many of the key principles of homeopathy, despite originating in 19th-century vitalistic concepts, are well aligned with current concepts in 21st-century Systems Biology and Complexity Science, e.g.:

- **The Cybernetic Loop:** Mind-body health is not managed as separate psychiatric and somatic conditions but as a single cybernetic loop. Observations of patient responses to homeopathic remedies suggest that they may act as a catalytic signal (information) triggering the Psychoneuroimmunology (PNI) network to self-correct [9].
- **Vital Force as Complex Adaptive System (CAS):** In modern biology, the “Vital Force” referenced in 19th-century homeopathic texts can be considered as what would today be described as a self-organizing network; it represents the global autoregulatory capacity (homeostasis and allostasis) of the organism [10].
- **Symptoms as Semiotics:** Symptoms are viewed as “signs” or information output indicating how the organism is processing a stressor. Suppressing these outputs without addressing the underlying cause or “network error” is considered counterproductive.
- **Hormesis and Stochastic Resonance:** The homeopathic remedy acts as a mimetic signal: by introducing “noise” that mimics the disease state, the therapy utilizes Stochastic Resonance to amplify the body’s detection of the disorder, triggering a corrective reset [11].
- **Nanostructures:** Research suggests that potentization may create structures – possibly nanobubbles or Quantum Coherence Domains – that retain the electromagnetic signature of the original substance, acting as “epigenetic modulators”; such hypotheses are currently being explored [12].

4. Evidence Landscape

The scientific investigation of homeopathy has historically been characterized by a profound epistemological tension. On one side stands the clinical experience of millions of patients and a growing body of trial data suggesting therapeutic benefit. On the other stands the theoretical barrier of the “Avogadro limit,” which dictates that beyond a dilution of approximately 10^{23} (corresponding to a 12c or 24x potency), the probability of a single molecule of the original substance remaining in the solution approaches zero. For nearly two centuries, this chemical

axiom has underpinned the sceptical assertion that homeopathic medicines are biologically inert – mere “placebos” consisting of water and sugar.

Recent advancements in material science and clinical research are increasingly challenging the historical “implausibility” of homeopathy. Current evidence demonstrates that homeopathic preparations retain measurable physicochemical properties and deliver clinical outcomes superior to placebo in rigorous trials.

Physicochemical Plausibility

- **Presence of Source Material:** Transmission Electron Microscopy (TEM) has confirmed that starting materials (e.g., metals) persist as nanoparticles in high-potency dilutions (30c, 200c), possibly retained via “froth flotation” at the liquid-air interface during succussion [12].
- **Solvent Structuring:** Nuclear Magnetic Resonance (NMR) studies demonstrate that the potentization process alters the organization of water molecules, creating unique “nanosized superstructures” or coherence domains that are distinct from simple water [13].
- **Reproducibility:** Systematic reviews indicate that 72% of physicochemical experiments demonstrate specific, measurable properties of homeopathic medicines distinct from controls [14].

Clinical Efficacy: High-Quality Randomised Controlled Trials (RCTs)

The clinical evidence base has matured significantly, with systematic reviews confirming efficacy beyond the placebo effect, particularly for individualized treatment.

- **Systematic Reviews:** A 2023 review of six meta-analyses found that five demonstrated significant positive effects of homeopathy compared to placebo [15].
- **Individualized Efficacy:** The most rigorous meta-analysis (Mathie et al., 2014) found individualized homeopathy to be 1.5 to 2.0 times more likely to have a beneficial effect than placebo, with the largest effect sizes observed in the highest-quality trials [16].
- **Objective Outcomes:** Efficacy is not limited to subjective outcomes. For example, a double-blind RCT on allergic rhinitis (Taylor et al., BMJ) demonstrated significant improvements in nasal airflow (objective measurement) compared to placebo (P=0.0001) [17].

Homeopathic Perspective for Happiness Index

Happiness Index measures “subjective wellbeing” (SWB), yet conventional metrics often miss the “how” of individual resilience [18].

- **Disposition as Biomarker:** Samuel Hahnemann identified “improvement in disposition” as the first sign of cure, mirroring the “Positive Affect” metrics of the World Happiness Report.
- **Neurophysiological Correlates:** Research has shown that homeopathic remedies can induce physiological shifts, such as increased Alpha wave magnitude (associated with relaxed alertness) and changes in Prefrontal Cortex cordance [19].
- **Observational Data:** In a study of 782 patients in Belgium, 95% of homeopathy patients reported satisfaction, compared to 20% with previous conventional care [20]. A study from Bulgaria (n= 547 patients) found very high satisfaction in patients, and good quality of homeopathic care in the country, and noted that patients value both the therapeutic results and the holistic, personal attitude of the practitioners [21].

Homeopathic Interventions for Mental Wellbeing

Homeopathy addresses the global mental health crisis by offering a non-suppressive approach to stress, anxiety, and depression.

- **Depression (Non-Inferiority):** The DEP-HOM study found individualized homeopathy to be non-inferior to Fluoxetine (Prozac) for moderate depression, with a superior safety profile [22].
- **Anxiety and Deprescribing:** The EPI3 study (France) showed that patients treated by homeopathic GPs had a 71% lower probability of using psychotropic drugs while achieving similar clinical outcomes [23].
- **Institutional Success:** The National Homoeopathy Research Institute in Mental Health (NHRIMH) under CCRH (Central Council for Research in Homeopathy), Ministry of Ayush, Govt. of India stands as a testament to the viability and efficacy of integrative mental healthcare: data from 2023–2025 portrays an institution operating at a massive scale (treating over 118,000 patients annually) while simultaneously conducting sophisticated clinical research [24]. The specific clinical outcomes – ranging from the remission of severe psychosis in Schizophrenia to developmental acceleration in Autism and the rapid resolution of Social Anxiety – are quantified by standardized metrics (PANSS, ISAA, SAD-D) and rigorous statistical analysis [25, 26, 27].

Furthermore, evidence suggests that individualized homeopathy, when delivered in a structured institutional setting, offers an underestimated effective therapeutic option for conditions often considered refractory to conventional care [28].

Lifestyle and Dietary Interventions

The homeopathic approach to healing, as established by Samuel Hahnemann in the *Organon of Medicine*, extends significantly beyond the administration of remedies. The foundational texts posit that a “true practitioner” must integrate lifestyle management, environmental assessment, and dietary regulation as core competencies, rather than peripheral suggestions.

- **The Physician as a Sustainer of Health:** Hahnemann defines the physician’s primary mission as “cure” – restoring the sick to health. However, in Aphorism 4, he qualifies this by designating the physician as a “sustainer of health.” This role requires the practitioner to identify and remove factors that engender or maintain disease [4]. Consequently, cure is not a unilateral action of a drug upon a passive body but a collaborative restoration of balance. The physician must act as an epidemiologist of the patient’s daily life, detecting formerly unperceived hazards (e.g., damp living conditions, sources of ongoing stress, or dietary excesses) that perpetuate illness.
- **Removing Obstacles to Recovery:** The removal of “obstacles to recovery” is a prerequisite for the success of any homeopathic intervention (Aphorism 3). In cases of chronic illness, Hahnemann warns in Aphorism 260 that “errors in regimen” often act as maintaining causes (Causa Occasionalis) that aggravate the disease [4].

Pseudo-chronic Diseases and the Modern Epidemic

A crucial distinction in homeopathic philosophy is the separation of true chronic diseases (e.g. caused by genetic predisposition) from “pseudo-chronic diseases” (Aphorism 77) arising from prolonged exposure to avoidable disease-causing influences, such as sedentary habits, poor diet, and stress [4].

This classification is highly relevant to the modern burden of Non-Communicable Diseases (NCDs) like Type 2 Diabetes and hypertension. These conditions often mimic chronic disease but are fundamentally rooted in lifestyle errors. Treating a pseudo-chronic condition solely with homeopathic remedies constitutes a clinical error: the homeopathic literature states that for these “iceberg” pathologies, Lifestyle Modification (LSM) is the primary curative agent, while the remedy serves a secondary role in restoring health [29].

Homeopathic Intervention for Lifestyle Disorders

The integration of homeopathy with lifestyle modifications (LSM) and Yoga is moving from theoretical frameworks to validated clinical practice.

Metabolic and Systemic Conditions

- **Hypothyroidism:** A 2025 RCT (n=200) demonstrated that adding Homeopathy and Lifestyle modification (Diet, Selenium, Stress Management) to conventional Levothyroxine therapy yielded superior outcomes than medication alone. The integrative group showed significant TSH reduction and potential for drug tapering. This confirms that lifestyle is not merely “advice” but a biochemical modulator that enhances the remedy’s action [30].
- **Hypertension:** In a rigorous study (n=217), Homeopathy + LSM significantly outperformed Placebo + LSM in reducing blood pressure. This study makes two crucial distinctions: it isolates the specific therapeutic effect of the homeopathic remedy, whilst also acknowledging that LSM is the ethical baseline for treatment [31].
- **Diabetes Mellitus:** Evidence supports Hahnemann’s Aphorism 77, categorising Type 2 Diabetes as a “pseudo-chronic” condition driven by lifestyle errors. Trials show that without removing the maintaining cause (dietary sugar/sedentary habits), medicines alone cannot metabolize excess glucose [32].

Structural and Recurrent Conditions

- **Chronic Nasal Polyps (Preventing Recurrence):** An integrative study showed that combining homeopathy with lifestyle changes (allergen avoidance, diet) reduced the recurrence rate to 16%, compared to 40% with homeopathy alone. The lifestyle changes likely removed the environmental triggers for polyp growth [33].
- **Neck Pain (Fusion Therapy):** In chronic non-specific neck pain, the combination of Homeopathy and Yoga proved superior to homeopathy alone.[34].

Functional and Hormonal Disorders

- **PCOS (Quality of Life):** A comparative study found that while Homeopathy alone and Homeopathy + Yoga achieved similar rates of menstrual regularity (~61-64%), the Yoga group experienced broader benefits in metabolic parameters and Quality of Life [35].
- **Cancer (Supportive Care):** Homeopathy can be effectively used alongside conventional oncology treatments to mitigate side-effects as “Supportive Care in Oncology” (SCO). For example, Calendula has been found to reduce radiation dermatitis [36].

Best Integrative Practices for Homeopathy

- **Integrative Oncology:** Studies suggest that homeopathy has a role to play in supporting patients through conventional cancer treatment. The Tuscany (Italy) has a highly

integrated public model where homeopathy is a key service. It is used by 36.8% of patients in public Integrative Oncology centers and is available in 23 out of 91 public integrative clinics [38, 39]. A retrospective study analysing national databases in France (including n=98,009 patients who underwent mastectomy for newly diagnosed non-metastatic breast cancer), found that patients who received add-on homeopathic treatment were better-able to tolerate conventional cancer treatment (chemotherapy/radiotherapy/surgery). This improved tolerance was evident as a significant decrease in the consumption of drugs for common side-effects (e.g. anti-nausea and anti-diarrhoea medication), suggesting an improvement in the patients' overall Quality of Life [40]. Standardized "Banerji Protocols" (e.g., *Ruta graveolens* for brain tumours) deserve further investigation as they may offer reproducible therapeutic adjuncts [37]. Furthermore, a study from Israel found that use of homeopathic medicines *Arnica montana* and *Bellis perennis* significantly reduced seroma formation after mastectomy in breast cancer patients (measured by time to drain removal) [41].

- **Antimicrobial Stewardship (AMR):** Homeopathy serves as an "Antibiotic sparing" strategy. The major epidemiological study EPI3 (France) found that homeopathy patients used 50% fewer antibiotics for respiratory infections, without compromising recovery [42]. The "One Health" strategy prioritizes the reduction of antimicrobial resistance (AMR) through rigorous antibiotic stewardship, yet acute upper respiratory tract infections (aURTIs) in paediatric populations remain a leading cause of inappropriate antibiotic prescribing. Recent real-world evidence underscores the potential of homeopathy to bridge this gap in primary care. A 2025 cohort study by Banik et al., analysing data from over 240,000 children and adolescents in Germany, demonstrated that initiating treatment with homeopathy significantly reduces the reliance on antibiotics. Specifically, paediatric patients treated with homeopathy showed a 19% lower risk of requiring a subsequent antibiotic prescription compared to those treated with conventional cough and cold medicines (HR: 1.19, $p < 0.001$) and an 18% lower risk compared to nasal medicines (HR: 1.18, $p < 0.001$). Crucially, this reduction in antibiotic consumption was achieved without compromising clinical outcomes, as recurrence rates for infections were comparable to or lower than those observed with conventional therapies. These findings position homeopathy not merely as a symptomatic treatment, but as a strategic tool in the "watchful waiting" protocol, offering a safe, non-suppressive alternative that directly supports global AMR reduction goals [48]. Crucially, this reduction in antibiotic consumption was achieved without compromising clinical outcomes, as recurrence rates for infections were comparable to or lower than those observed with conventional therapies. Furthermore, a recent systematic review on acute otitis media found that individual RCTs report positive effects on clinical improvement and/or antibiotic use at relevant time points with homeopathy with no safety issues, warranting further research. Notably, one pooled analysis indicated a 46% reduction in filled antibiotic prescriptions when homeopathy was used as an add-on therapy. Taken collectively, these findings position homeopathy not merely as a symptomatic treatment, but as a strategic tool in the "watchful waiting" protocol, offering a safe, non-suppressive alternative that directly supports global AMR reduction goals [49]

Integration of Homeopathy within Ayush

The integration of Homeopathy with Ayurveda, Yoga, Unani, and Siddha represents a coherent, patient-centric optimisation of the Ayush approach.

- **Documented Practices:** In operational Integrated Ayush Hospitals, Wellness Clinics (e.g., President's Estate) and tertiary care centres (e.g., Safdarjung, AIIMS) this model is already yielding data on cross-system efficacy [44, 28].
- **Published Studies:** There is robust evidence for the synergistic efficacy of Homeopathy + Yoga in conditions like Migraine, Neck Pain, and NCDs [34, 45]. Emerging evidence also supports the Pharmacological Combination of Homeopathy + Ayurveda (e.g., for Hyperuricemia and Diabetes), opening novel integrative solutions [46, 47].
- **Policy Support:** The National Ayush Mission, the establishment of Integrated Hospitals, and the release of unified Standard Treatment Guidelines provide the necessary structural and regulatory support to achieve integration [28].

The “Intra-Ayush” model offers a comprehensive toolkit for chronic disease management. Yoga provides the structural and mental foundation; Ayurveda, Unani, and Siddha provide the metabolic, nutritional, and regimental correction; and Homeopathy simultaneously manages current symptoms and reduces ‘constitutional’ susceptibility. When orchestrated through defined cross-referral protocols and supported by co-located infrastructure, this integration delivers a synergistic therapeutic impact that exceeds the sum of its parts, offering a viable pathway for addressing the complex disease burden in India, setting an example for other countries who are looking for healthcare solutions [45].

5. Current Limitations and Research Gaps

Despite promising evidence, the sector faces systemic hurdles driven by policy exclusions and funding deficits.

- **Methodological Incongruence:** The “Gold Standard” RCT is not always well-suited for homeopathy due to the challenge of delivering individualized prescriptions whilst also considering replicability. There is a critical lack of “Pragmatic RCTs” that allow for individual prescribing within controlled settings.
- **The Plausibility Issue:** The lack of a widely accepted biological explanation for the mode of action of dynamized ultra-dilutions remains a target for those critical of homeopathy. Basic science research into the physicochemical properties of homeopathic remedies is underfunded.
- **Health Economics Gap:** While the existing data supports the cost-effectiveness of homeopathy [43], more rigorous modern health economic data (e.g., QALYs) on long-term impacts are needed.

6. Future Direction

To align with the WHO Traditional Medicine Strategy 2025–2034, the following directions are proposed:

- **Revive “Pump-Priming”:** Dedicated funding must be allocated to basic science research (physics/chemistry of ultra-dilutions) to resolve the “plausibility gap”.
- **Adoption of Whole System Research:** Shift the research focus to include “Pragmatic RCTs” and adaptive trial designs that evaluate the entire service of homeopathy (consultation + remedy) rather than just the pill.

- **Execute Economic Analysis:** Commission independent, large-scale health economic studies to assess cost-savings and sustainability, specifically regarding “Deprescribing” and chronic disease management.
- **Integration into Primary Health Care:** Train primary care physicians and community health workers in homeopathic triage to offload minor cases and reduce antibiotic reliance.
- **Green Mental Health:** Promote homeopathy as a low-carbon, environmentally sustainable alternative to the pharmaceutical industry in national “Eco-health” policies.
- **Collaborative Global Integrative Research Framework for Homeopathy:** Strengthen the global evidence base for homeopathy through integrative research, multi-country randomised and pragmatic trials, and shared data systems.

7. Conclusion

Analysis of the World Happiness Report’s methodology reveals a striking alignment with homeopathic philosophy: while the index seeks to measure the quality of existence, homeopathy seeks to enhance it through the modulation of the autoregulatory mechanisms inherent in the human body. However, as this framework demonstrates, the potential of homeopathy extends far beyond mental wellbeing.

This white paper establishes that Homeopathy is not merely a system of therapeutics but a comprehensive framework for disease, lifestyle and metabolic management. By reviving the Hahnemannian concept of the physician as a “Sustainer of Health,” we bridge the gap between simple prescription and true holistic care. The evidence presented – ranging from assessment of the management of Non-Communicable Diseases (NCDs) such as hypertension and diabetes, to the impacts seen from synergistic “Intra-Ayush” application of Yoga and Homeopathy – validates a model that is both scientifically grounded and clinically effective.

Furthermore, with sufficient investment, homeopathy offers novel, scalable solutions to critical global challenges, including Antimicrobial Resistance (AMR) and the safe “deprescribing” of psychotropic and analgesic medications. We urge the assembly to operationalize the vision of the WHO Strategy 2025–2034 by integrating these restorative principles into a pluralistic health system. By moving the focus from “treating disease labels” to “restoring the healthy person” through a combined strategy of lifestyle modification, structural integration, and individualized therapeutics, homeopathy offers a sustainable pathway to global “One Health.”

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