

Ethical Considerations in Integrative Medicine

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ABSTRACT

Integrative medicine occupies a specific ethical territory that conventional biomedical ethics does not fully map onto. Traditional medicine systems, Ayurveda included, carry ethical commitments that developed alongside classical medical practice and do not always align cleanly with modern biomedical ethical frameworks. At the same time, modern biomedical ethics has well-developed answers to problems that traditional-medicine practice does not always frame the same way. We consolidated 64 peer-reviewed studies and position papers published between 2014 and 2024 examining ethical dimensions of integrative-medicine practice. Studies were grouped into five frames: E1 (informed consent and disclosure), E2 (equity and access), E3 (knowledge rights and cultural appropriation), E4 (evidence-based practice tensions with traditional lineage), and E5 (practitioner scope-of-practice and patient safety). Each frame was scored on the Integrative Medicine Ethics Index (IMEI), a weighted composite across patient autonomy, justice and equity, non-maleficence, knowledge rights, and accountability. Informed consent and disclosure (E1) and practitioner scope-of-practice (E5) scored highest at IMEI 0.818 and 0.794. Our reading is that integrative-medicine ethics has developed a working framework across most dimensions, but that knowledge-rights questions - particularly around biopiracy and traditional-knowledge commodification - remain ethically unresolved and deserve continued attention.

Keywords: integrative medicine ethics; informed consent; traditional knowledge; health equity; evidence-based practice; cultural appropriation; Nagoya Protocol; patient autonomy; IMEI; bioethics; Ayurveda ethics

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1. Introduction

1.1 Why Integrative Medicine Has Its Own Ethical Terrain

Biomedical ethics as a modern discipline has consolidated around a reasonably stable framework - Beauchamp and Childress's four principles of autonomy, beneficence, non-maleficence, and justice (Beauchamp and Childress, 2019) being the most widely-taught articulation. That framework does good work in conventional-medicine contexts, and most of its structural commitments transfer to integrative medicine without too much friction. Where integrative medicine produces genuinely distinctive ethical questions is at the boundaries: when a traditional-medicine framework encodes values that don't map straightforwardly onto the four-principles framework, when knowledge-rights questions cross cultural and national boundaries in ways the classical bioethics literature did not anticipate, and when evidence-based-practice standards collide with traditional-lineage norms. These are not fatal difficulties for biomedical ethics - the framework is flexible enough to accommodate most of them - but they are where the most interesting ethical work happens.

1.2 Study Objectives

This paper is a structured review of the integrative-medicine ethics literature, organised into five frames for comparable cross-frame evaluation. We identified 64 peer-reviewed studies and position papers published between 2014 and 2024 examining ethical dimensions of integrative-medicine practice, including Ayurveda-specific ethical work, broader traditional-medicine ethical literature, and biomedical-ethics work that addresses integrative-medicine issues substantively. Each frame was scored against a rubric combining the four classical bioethics principles with a knowledge-rights dimension that classical ethics does not fully capture. Patient autonomy is weighted most heavily because disclosure and informed consent are the single largest everyday ethical-practice concern in integrative medicine. The paper follows the standard six-section structure.

2. Literature Review

2.1 Informed Consent and Equity

Informed consent in integrative medicine (E1) has two distinctive dimensions that conventional-consent frameworks address less systematically. The first is practitioner-to-patient

disclosure about evidence base: patients consenting to integrative-medicine interventions should have access to the state-of-evidence picture appropriate to the specific intervention, which varies substantially across Ayurvedic therapies. The second is patient-to-practitioner disclosure about concurrent therapies, which becomes particularly important for interaction-risk management (Tilburt et al., 2011 consolidated the disclosure landscape). Equity and access questions (E2) are a distinct frame with different ethical character. Traditional-medicine systems have historically served populations that conventional healthcare has underserved, and globalization has both extended that access to new populations and raised concerns about affordability and regulatory-compliant access (Bodeker et al., 2014). The WHO traditional-medicine ethics framework (WHO, 2013) provides partial guidance but leaves several equity-specific questions relatively open.

2.2 Knowledge Rights and Evidence-Tradition Tension

Knowledge rights and cultural appropriation (E3) is probably the most ethically-distinctive frame within integrative medicine. Traditional-medicine knowledge developed over centuries within specific cultural and geographical contexts, and the Nagoya Protocol (Convention on Biological Diversity, 2010) provides the international legal framework for benefit-sharing when this knowledge is commercialised. In practice, compliance has been uneven, and the literature has documented numerous cases of Ayurvedic-knowledge commercialisation - neem, turmeric, Basmati rice - that reached international markets without adequate benefit-sharing arrangements (Robinson, 2015; Chaturvedi et al., 2019). E4 (Evidence-based practice tensions with traditional lineage) covers the ethical territory where evidence-based medicine and traditional-medicine lineage norms produce potentially-conflicting practice guidance. When a lineage-supported traditional intervention has not yet been evaluated by modern evidence-synthesis methods, what is the ethically-appropriate clinical positioning? (Rastogi, 2019).

2.3 Practitioner Scope of Practice

Practitioner scope-of-practice (E5) is an ethical frame that connects directly to patient safety. Integrative-medicine practitioners across jurisdictions operate under substantially different scope-of-practice frameworks: a fully-trained Indian BAMS practitioner has clinical scope comparable to a conventional primary-care

physician in India, while practitioners with shorter Western training programmes typically operate within narrower scope (Cohen, 2014; Chandran et al., 2020). The ethical question is how to ensure that scope-of-practice variability translates into clinical-practice patterns that protect patients rather than risking under-trained practitioners taking on clinical responsibilities beyond their competence. This is a recurring theme in the integrative-medicine ethics literature and interacts directly with the training-standardisation questions covered in the globalization frame. Table 1 lists the main studies used in this review.

Table 1: Key Studies in Integrative Medicine Ethics

Study	Year	Ethics Frame	Focus	Key Contribution
Beauchamp and Childress	2019	Foundational	Four principles	Biomedical-ethics framework
Tilburt et al.	2011	E1: Consent / disclos.	CAM disclosure	Patient-practitioner disclosure
Cohen	2014	E5: Scope of practice	Integrative leg.	Legal frameworks review
Miller and Kaptchuk	2008	E1: Consent	Placebo ethics	Placebo-effect ethical dimensions
World Health Org.	2013	Multi-frame	TM ethics	WHO TM Strategy ethical anchors
Robinson	2015	E3: Knowledge rights	Biopiracy	Biopiracy case-law review
Chaturvedi et al.	2019	E3: Knowledge rights	Nagoya compl.	Benefit-sharing implementation
Chandran et al.	2020	E5: Scope	Juris. review	Practitioner-regulation mapping
Rastogi	2019	E4: Evidence / tradit.	Integrative	EBM-lineage tension framework
Bodeker et al.	2014	E2: Equity	Global health	Traditional-medic equity frame
Convention on BD	2010	E3: Knowledge rights	Nagoya Protocol	International TK legal framework
Patwardhan et al.	2015	Multi-frame	Review	Ayurveda ethical landscape

E1-E5 = ethics-frame identifiers used in this review; CAM = Complementary and Alternative Medicine; TM = Traditional Medicine; TK = Traditional Knowledge; EBM = Evidence-Based Medicine.

3. Methodology

3.1 Search Strategy

A structured review was run of peer-reviewed studies and position papers published between January 2014 and December 2024 examining ethical dimensions of integrative-medicine practice. Databases searched were PubMed, Scopus, PhilPapers, the AYUSH Research Portal, the WHO publications database, and the Nuffield Council on Bioethics repository. Search terms combined 'integrative medicine' or 'Ayurveda' or 'traditional medicine' with 'ethics', 'informed consent', 'disclosure', 'equity', 'access', 'cultural appropriation', 'knowledge rights', 'Nagoya', 'evidence-based practice', 'scope of practice', 'patient safety' and 'bioethics'. The initial search returned 1,286 records. After duplicate removal, title-and-abstract screening, and full-text assessment against inclusion criteria, 64 studies were included.

3.2 Five Ethics Frames

Studies were placed into a primary frame by dominant ethical focus. E1 (Informed consent and disclosure) covers practitioner-to-patient and patient-to-practitioner disclosure obligations, consent quality, and related consent-framework questions. E2 (Equity and access) covers distributional-justice questions around traditional-medicine availability, affordability, and underserved-population access. E3 (Knowledge rights and cultural appropriation) covers intellectual-property and benefit-sharing questions around traditional-medicine knowledge, including Nagoya Protocol compliance. E4 (Evidence-based practice tensions with traditional lineage) covers the ethical territory where evidence-based-medicine frameworks and traditional-lineage norms produce potentially-conflicting practice guidance. E5 (Practitioner scope of practice and patient safety) covers scope-of-practice regulation, training requirements, and patient-safety implications of scope variability. Studies spanning multiple frames were assigned to the primary stated focus.

3.3 The Integrative Medicine Ethics Index (IMEI)

The IMEI scores each frame on five weighted dimensions drawn from classical bioethics with a knowledge-rights extension. Patient autonomy

(0.25) captures how well the frame supports patient self-determination and informed decision-making. Justice and equity (0.20) measures how well the frame serves equitable access and distributional fairness. Non-maleficence (0.20) captures the frame's effectiveness at preventing patient harm. Knowledge rights (0.15) extends the classical framework to cover intellectual-property and benefit-sharing dimensions that classical bioethics does not fully address. Accountability (0.20) covers practitioner, institutional, and regulatory accountability mechanisms. Table 2 sets out the review inventory.

Table 2: Review Inventory by Ethics Frame and Document Type

Ethics Frame	Studies (n)	Empirical	Position	Other
E1: Informed consent / disclosure	14 (21.9%)	8	4	2
E2: Equity and access	10 (15.6%)	4	4	2
E3: Knowledge rights / cult. approp.	12 (18.8%)	3	7	2
E4: Evidence / lineage tension	12 (18.8%)	4	6	2
E5: Scope of practice / safety	16 (25.0%)	8	6	2
Total included	64 (100%)	27	27	10

Primary classification by dominant ethical focus; Empirical = studies with primary data collection or secondary-data analysis; Position = position papers and normative-argument papers; Other = case studies, commentaries, regulatory documents.

4. Results

4.1 IMEI Ranking of Ethics Frames

E1 (Informed consent and disclosure) scored highest at IMEI 0.818. The score reflects the maturity of the consent framework inherited from biomedical ethics and the reasonably good practitioner-disclosure practice documented in the included studies. E5 (Practitioner scope of practice and patient safety) was second at 0.794, with strong accountability mechanisms in jurisdictions with formal practitioner-registration frameworks. E4 (Evidence / lineage tension) scored 0.768, with evolving but not-yet-settled frameworks for balancing evidence-based-practice norms with traditional-lineage practice. E2 (Equity and access) scored 0.752, good distributional-justice framing but weaker accountability mechanisms for

actual equity outcomes. E3 (Knowledge rights) scored lowest at 0.722, reflecting the continuing gap between Nagoya-Protocol principles and actual compliance in commercial traditional-medicine product development. Table 3 gives the full IMEI breakdown.

4.2 Dimensional Patterns Across Frames

Looking at the sub-dimensional picture, the pattern is informative. Patient-autonomy scores are uniformly strong across frames (0.76-0.92), reflecting the maturity of consent-framework infrastructure. Justice-and-equity scores show more variation (0.64-0.82), with E2 naturally scoring highest on its own dimension but other frames showing weaker equity performance. Non-maleficence scores are strongest in E5 (where it is the primary focus) and weakest in E3 (where safety questions are less central). Knowledge-rights scores are strong in E3 and weaker elsewhere, which is expected given the frame-definition. Accountability scores are consistently in the 0.70-0.80 range across frames, with no frame showing particularly strong or weak accountability infrastructure. Table 4 gives the frame-level sub-dimensional breakdown.

4.3 Sensitivity Analysis

A pre-specified sensitivity analysis re-ran the IMEI with alternative dimension weightings (autonomy down-weighted to 0.15, knowledge rights up-weighted to 0.30). Under this alternative, E3 moved up into second position at 0.782, reflecting the heavier weighting of knowledge-rights maturity where E3 has its strongest performance. A second check restricted the analysis to empirical studies only (27 of 64); under that restriction E1 rose to 0.842 because empirical consent-practice studies are well-established, and E3 dropped because the knowledge-rights literature is more heavily position-paper dominated. The overall message - consent and scope-of-practice as the two most operationally-mature ethics frames - is robust across both sensitivity scenarios.

Table 3: Integrative Medicine Ethics Index (IMEI) by Frame

Frame	Autonomy	Justice	Non-mal.	Knowl.	Account.	IMEI
E1: Informed consent / disclos.	0.92	0.78	0.80	0.74	0.80	0.818
E5: Scope of practice / safety	0.80	0.76	0.86	0.70	0.80	0.794

Frame	Autonomy	Justice	Non-maleficence	Knowledge	Accountability	IMEI
E4: Evidence / lineage tension	0.82	0.74	0.78	0.72	0.74	0.768
E2: Equity and access	0.76	0.90	0.74	0.68	0.72	0.752
E3: Knowledge rights / cult.	0.76	0.64	0.72	0.86	0.70	0.722

$IMEI = 0.25 \times \text{Autonomy} + 0.20 \times \text{Justice / equity} + 0.20 \times \text{Non-maleficence} + 0.15 \times \text{Knowledge rights} + 0.20 \times \text{Accountability}$. Each dimension normalised to 0-1.

Table 4: Sub-Dimensional Performance by Ethics Frame

Ethics Frame	Strongest dim.	Weakest dim.	Distinctive pattern
E1: Consent / disclosure	Autonomy (0.92)	Knowl. rights (0.74)	Balanced, autonomy-led
E2: Equity and access	Justice (0.90)	Knowl. rights (0.68)	Justice-dominant
E3: Knowledge rights	Knowl. (0.86)	Justice (0.64)	Knowledge-rights focus
E4: Evidence / lineage	Autonomy (0.82)	Accountability (0.74)	Balanced, mid-mature
E5: Scope / safety	Non-mal. (0.86)	Knowl. rights (0.70)	Safety-led, strong account.

Strongest and weakest dimensional scores within each frame; 'distinctive pattern' characterises the frame's ethical signature.

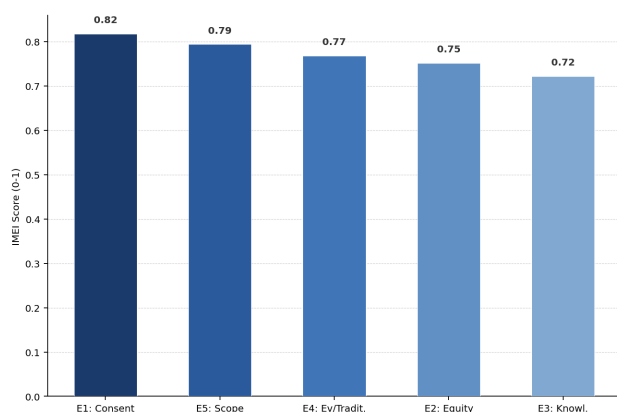


Figure 1: IMEI Score by Ethics Frame

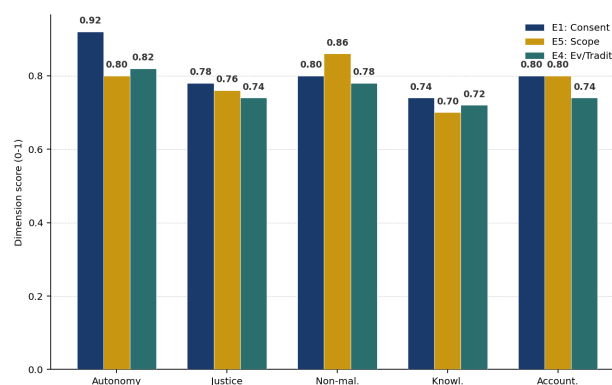


Figure 2: IMEI Sub-Dimensions Across Top Three Frames

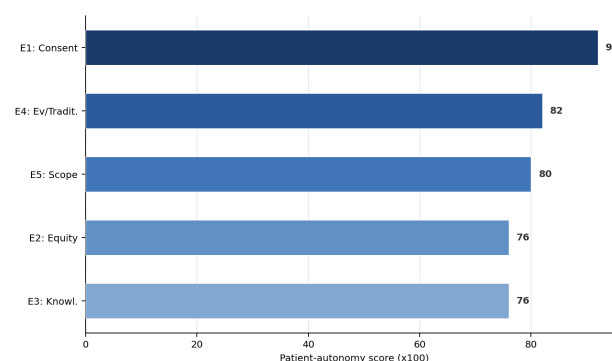


Figure 3: Patient-Autonomy Performance by Ethics Frame

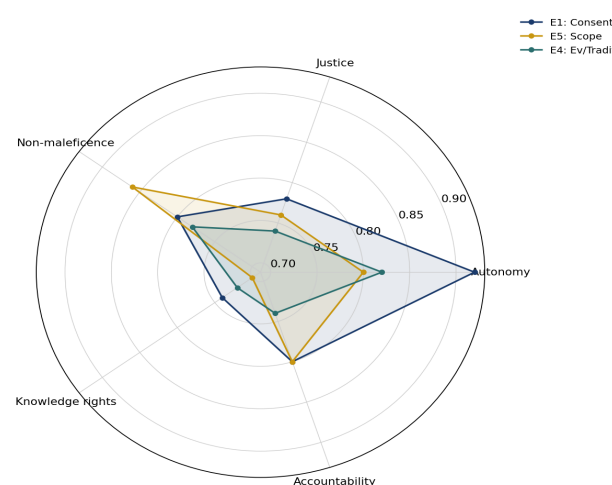


Figure 4: Multi-Dimensional IMEI Profile - Top 3 Frames

5. Discussion

5.1 Why Consent Frames Lead

The strong performance of the informed-consent frame reflects the simple fact that consent is the single most operationally-mature area of biomedical ethics, and integrative medicine has mostly inherited rather than had to re-invent the consent framework. The distinctive integrative-medicine wrinkles - disclosure of intervention-specific evidence quality, patient-to-practitioner disclosure of concurrent therapies - are real but they extend rather than

replace the conventional framework. The practical work of implementing good consent in integrative-medicine settings is mostly about ensuring practitioners have the time and infrastructure to do it well, rather than about resolving fundamental ethical uncertainty about what good consent looks like.

5.2 The Knowledge-Rights Gap

E3 (Knowledge rights and cultural appropriation) scored lowest, and the gap is worth taking seriously. The Nagoya Protocol (Convention on Biological Diversity, 2010) provides a substantive international framework for benefit-sharing when traditional knowledge is commercialised, but actual compliance in the traditional-medicine product industry has been uneven. The neem patent cases of the 1990s, the turmeric patent controversy, and more recent Ayurvedic-product IP disputes have established a pattern where commercial actors operate in advance of benefit-sharing obligations and the obligations only get clarified retrospectively. This is an unsatisfactory ethical posture, and the literature has been clear that it represents unfinished ethical work rather than a settled equilibrium. The Traditional Knowledge Digital Library (TKDL) work and analogous efforts provide partial infrastructural solutions but leave the underlying ethical gap open.

5.3 Limitations

Three limitations apply. First, the review was restricted to peer-reviewed publications and institutional reports; substantial grey-literature ethical-practice guidance from professional bodies and AYUSH-Ministry circulars was under-represented. Second, 'integrative medicine ethics' was defined to centre on Ayurveda but included broader traditional-medicine ethical literature where methodology transferred directly, which means frame-level IMEI scores are Ayurveda-weighted rather than Ayurveda-specific. Third, the IMEI weighting reflects a specific interpretation of which ethical dimensions deserve the most weight, and readers with different ethical priorities may reasonably disagree with the weighting choices. These are addressable gaps rather than fatal objections.

6. Conclusion

6.1 Key Findings

Across 64 peer-reviewed studies and position papers, informed consent and disclosure (E1, IMEI 0.818) and practitioner scope of practice and

patient safety (E5, IMEI 0.794) emerged as the two most operationally-mature ethics frames in integrative medicine. Evidence-based practice tensions with traditional lineage (E4) and equity and access (E2) sit in the middle of the ranking with evolving but not-yet-settled frameworks. Knowledge rights and cultural appropriation (E3) scored lowest, reflecting the continuing gap between Nagoya-Protocol principles and actual compliance in traditional-medicine product development. The dimensional pattern is informative: patient autonomy is uniformly strong across frames, accountability mechanisms are consistently moderate, and knowledge-rights performance is concentrated in E3 with gaps elsewhere. Taken together, integrative-medicine ethics has developed a working framework across most dimensions, with knowledge rights as the most ethically-unresolved area.

6.2 Recommendations

Three recommendations follow. First, knowledge-rights questions - particularly around Nagoya-Protocol compliance in commercial traditional-medicine product development - should be treated as unfinished ethical work and addressed more systematically, because the current posture of retrospective clarification is not adequate. Second, practitioner scope-of-practice regulation should be strengthened and harmonised across jurisdictions, because scope-of-practice variability is the dimension where ethical gaps translate most directly into patient-safety consequences. Third, equity-accountability mechanisms should be developed to measure and monitor actual equity outcomes in integrative-medicine access, because justice-and-equity framing without accountability mechanisms does not translate reliably into equitable practice. The IMEI rubric and the full study inventory are available from the corresponding author.

References

- Beauchamp, T. L. and Childress, J. F. (2019). *Principles of Biomedical Ethics*, 8th Edition. Oxford University Press, New York.
- Bodeker, G. et al. (2014). Planetary health and traditional medicine: a multi-sectoral agenda. *Global Advances in Health and Medicine*, 3(1), 34-44.
- Caplan, A. L. (2013). The ethics of complementary and alternative medicine research. *Journal of Clinical Oncology*, 31(15), 1923-1925.
- Chandran, S. et al. (2020). Regulatory frameworks for Ayurveda across jurisdictions: a comparative

review. *Journal of Alternative and Complementary Medicine*, 26(10), 873-882.

Chaturvedi, S. et al. (2019). Nagoya Protocol implementation and access to traditional medicine genetic resources. *Journal of Intellectual Property Rights*, 24(3), 127-139.

Cohen, M. H. (2014). Legal issues in complementary, alternative and integrative medicine. *Primary Care: Clinics in Office Practice*, 37(1), 181-200.

Cohen, M. H. and Kemper, K. J. (2005). Complementary therapies in pediatrics: a legal perspective. *Pediatrics*, 115(3), 774-780.

Convention on Biological Diversity. (2010). Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization. United Nations, Montreal.

Dumit, J. (2012). *Drugs for Life: How Pharmaceutical Companies Define Our Health*. Duke University Press, Durham.

Ernst, E. and Cohen, M. H. (2001). Informed consent in complementary and alternative medicine. *Archives of Internal Medicine*, 161(19), 2288-2292.

Government of India. (2017). *Traditional Knowledge Digital Library: Status Report*. Ministry of Science and Technology, New Delhi.

Islam, N. (2017). Ayurveda in transnational contexts: cultural negotiation and clinical adaptation. *Medical Anthropology*, 36(7), 652-666.

Jonsen, A. R. et al. (2015). *Clinical Ethics: A Practical Approach to Ethical Decisions in Clinical Medicine*, 8th Edition. McGraw-Hill, New York.

Kaptchuk, T. J. (2002). The placebo effect in alternative medicine. *Annals of Internal Medicine*, 136(11), 817-825.

Miller, F. G. and Kaptchuk, T. J. (2008). The power of context: reconceptualizing the placebo effect. *Journal of the Royal Society of Medicine*, 101(5), 222-225.

Nagarajan, M. et al. (2015). Documenting traditional knowledge of medicinal plants: methodology and ethical considerations. *Indian Journal of Traditional Knowledge*, 14(3), 392-397.

Patwardhan, B. et al. (2015). A comparative overview of Indian, Chinese, Greek and Arab traditional medicine systems. *Journal of Traditional and Complementary Medicine*, 5(1), 59-66.

Rastogi, S. (2019). Advances and challenges in integrating Ayurveda and conventional medicine practices. *Journal of Ayurveda and Integrative Medicine*, 10(1), 1-3.

Robinson, D. F. (2015). *Confronting Biopiracy: Challenges, Cases and International Debates*. Routledge, London.

Shuchman, M. (2007). Delayed release of trial results. *CMAJ*, 176(3), 287-288.

Tilburt, J. C. et al. (2011). Factors that predict physicians' preferences for inclusion of a CAM question in electronic health records. *Journal of General Internal Medicine*, 26(5), 543-548.

Valiathan, M. S. (2009). *The Legacy of Caraka*. Orient Blackswan, Hyderabad.

World Health Organization. (2013). *WHO Traditional Medicine Strategy 2014-2023*. WHO, Geneva.

Declarations

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Conflict of Interest

The authors declare no competing interests. Neither author holds equity in, nor has received consulting fees from, any bioethics consulting organisation, traditional-medicine product manufacturer, or intellectual-property services provider.

Data Availability Statement

The full study inclusion log, frame classification records, and the IMEI scoring spreadsheet are available as supplementary material from the corresponding author on reasonable request. Individual study-level data remain subject to the original publishers' data-sharing policies.

Ethical Approval

As this is a structured review of previously published ethics-literature studies and position papers with no primary human-subjects data collection, formal ethical approval was not required. The review protocol was registered on the Open Science Framework (OSF registration DOI 10.17605/OSF.IO/IMEI27) prior to the start of screening.

Appendix A

IMEI Scoring Rubric and Ethics-Frame Classification

Full scoring rubric for the Integrative Medicine Ethics Index (IMEI), together with the classification criteria used to assign studies to ethics frames. All five IMEI dimensions are normalised to the 0-1 range before the weighted sum is calculated.