

RESEARCH ARTICLE

Navigating educational barriers: Bridging the gaps in forensic medicine and medical jurisprudence within Ayurveda studies in India

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Abstract

Background: The Bachelor of Ayurvedic Medicine and Surgery (BAMS) curriculum was revised by the National Commission for Indian System of Medicine in 2021–22. The updated syllabus now provides for extensive theoretical knowledge and skill development in forensic medicine (Agada Tantra evam Vidhi Vaidyaka), comparable with the MBBS (Bachelor of Medicine, Bachelor of Surgery) programme. This paper critically analyses these rigorous curricular reforms and argues that further steps are needed to provide practical training opportunities to Ayurveda students in line with those available to their MBBS counterparts in forensic medicine.

Methods: This study employs a non-empirical methodology, analysing the existing literature, curriculum frameworks, and professional guidelines to evaluate the current state of forensic medicine education within Ayurveda.

Results: The findings reveal significant gaps in the opportunities for practical training and regulatory restrictions for Ayurveda practitioners, which hinder them from effectively engaging with medico-legal issues in the clinical practice of forensic medicine.

Conclusion: Comprehensive practical training and interdisciplinary collaboration are crucial for bridging the gap between practitioners of Ayurveda and those of modern medicine. This would not only enhance the professional capabilities of Ayurveda practitioners but also contribute to an integrated and equitable healthcare system.

Keywords: Ayurveda, curriculum, forensic medicine, law, medical jurisprudence, medical practitioners

Introduction

The ancient Indian medical system known as Ayurveda has been practised for centuries. In the ancient and medieval eras, it served as the primary healthcare system in India. The Ayurvedic education system of today has undergone dramatic alterations over the centuries, most notably the transition from the classical *Gurukula* system of individualised, residential apprenticeship to the present-day university-based pedagogical framework, with structured curricula and standardised teaching methodologies. With the evolving demands of India's medico-legal system in the current era and the rollout of the National Education Policy 2020, the question of equitable professional recognition for Ayurveda practitioners has gained urgency. Ayurveda has eight clinical

branches, one of which is Agada Tantra. The term *Agada* is derived from “a-” (negation) and “gada” (disease/poison); it refers to the branch of Ayurveda that deals with the identification, effects, and treatment of poisons. It deploys numerous antidotes and other therapeutic remedies against poisons originating from plants and animals as well as inorganic matter.

The other components of Agada Tantra include Vyavahara Ayurveda and Vidhi Vaidyaka. The term “*vyavahara*” refers to legal proceedings or disputes; this branch focuses on the medico-legal examination of injuries, cause of death, and forensic evidence. The term “*vidhi*” means law, while “*vaidyaka*” means medical science — together, they refer to a discipline that governs the ethical, legal, and professional responsibilities of physicians under the law. The contemporary equivalents of these branches would be toxicology (Agada Tantra), forensic medicine (Vyavahara Ayurveda), and medical jurisprudence (Vidhi Vaidyaka).

Every undergraduate enrolled in Ayurveda studies all three components under the subject of Agada Tantra evam Vidhi Vaidyaka. In some institutions, this subject is also offered as a postgraduate course, allowing students to further specialise. Despite undergoing comprehensive training in forensic medicine and medical jurisprudence, graduates of the Bachelor of Ayurvedic Medicine and Surgery (BAMS) programme remain excluded from key medico-legal roles, such as performing autopsies or issuing medico-legal certificates. This exclusion continues despite curriculum reforms introduced by the National Commission for Indian System of Medicine (NCISM), under which the programme now incorporates several components comparable to the forensic medicine training provided in the Bachelor of Medicine, Bachelor of Surgery (MBBS) programme. While Ayurveda students, as per the latest curriculum, are expected to engage in experiential learning through case studies and field exposure, adequate support from government hospitals and affiliated institutions remains limited to a small number of institutions. In several regions, the prevailing legal and institutional barriers — such as restrictions on permitting Ayurveda students to participate in medico-legal training, including autopsies, examination of victims or accused persons, medico-legal documentation, reporting, and certification — significantly limit their practical exposure and professional participation [1].

This paper explores the ethical dilemmas and structural disparities that bar qualified Ayurveda practitioners from serving in medico-legal roles. It argues that the current framework fails to uphold the principles of equity, justice, professional training, and professional merit. It therefore proposes reforms to bridge the gap between education and practice.

Methods

This study adopts a non-empirical, doctrinal, and qualitative research approach to critically analyse the structural, legal, and educational barriers faced by Ayurveda practitioners trained in toxicology, forensic medicine, and medical jurisprudence (Agada Tantra, Vyavahara Ayurveda, and Vidhi Vaidyaka). It draws on statutory provisions, policy guidelines, and educational frameworks to evaluate the disparities in the medico-legal responsibilities of BAMS and MBBS graduates. Primary data sources for this study included legal texts, such as the relevant statutes and judicial rulings. Secondary sources included peer-reviewed journal articles, curriculum documents, and policy reports by bodies such as the Indian Academy of Forensic Medicine (IAFM) and the NCISM. The study also included an in-depth review of the NCISM's updated BAMS curriculum and postgraduate training protocols to assess their forensic training content.

This analysis is grounded in a bioethical and comparative health justice framework, focusing on the principles of justice, professional autonomy, and equitable rights to medico-legal practice. The study aims to bridge the gap between theoretical training and legal recognition, offering policy recommendations for the practical integration of Ayurveda-based forensic practitioners with India's broader healthcare and legal systems.

History of Vyavahara Ayurveda and Vidhi Vaidyaka

Medicine and law have been connected from the earliest times. The Indus Valley Civilisation in India likely utilised metals and minerals as medicines, poisons, weapons, cosmetics, and dyes. The Vedas provided detailed instructions on healing wounds, the use of antidotes for poisoning, and treatment of snake bites.

Acharya Sushruta, primarily renowned for his contributions to Shalya Tantra (surgery) and Shalakya Tantra (ear, nose, and throat and head-related treatments), also laid the foundations of Agada Tantra, creating a discipline similar to modern toxicology. He also made significant contributions to the detection and management of poisoning cases, focusing on poisonous substances such as snake and arthropod venom [2: chaps 2–3]. He described different means of contact poisoning and also discussed homicidal poisoning, especially when targeting a king or ruler [2: chap 1]. He promoted the use of animals in a variety of experiments and, in particular, as test subjects for food before it was served to the king. He described the concepts of *vishaakta vayu* (polluted air),

vishaakta jala (polluted water), and *vishaakta bhumi* (polluted land) and prescribed remedial measures [2: chap 3:7-16].

Acharya Charaka developed a code of conduct and ethics for medical practitioners. At the heart of these was the Charaka oath, which encapsulates the responsibilities and commitments that Ayurveda practitioners owe to society. This oath elaborates on the ethical standards that govern the practice of medicine, emphasising the need for integrity, compassion, and dedication to the wellbeing of patients [3]. The oath also underscores the importance of respecting life, maintaining confidentiality, and practising medicine with humility. It serves as a reminder that society bestows a profound trust upon the physician, requiring practitioners to act with honesty, kindness, and respect for the dignity of each patient.

Acharya Vagbhata provided insights into the modes of action, properties, clinical symptoms, and critical periods of mitigation of various poisons [4].

Issues of medical ethics were also discussed in detail in the classic Brihatrayee (*Charaka Samhita*, *Sushruta Samhita* and *Asthanga Hridaya/Sangraha*).

However, the idea of punishment for medical negligence, or in matters related to forensic medicine, was not discussed in these texts. Only later textbooks, such as the *Manusmriti* and Kautilya's *Arthashastra*, carried references to this.

The *Manusmriti* introduced discipline into the practice of medicine by way of laws and discussed topics related to Vyavahara Ayurveda. According to Acharya Manu, obtaining justice in the face of prosecution in court is termed *vyavahara*. The *Manusmriti* also outlines potential repercussions for practitioners who fail to meet their ethical obligations, thus creating a legal basis for accountability in healthcare [5]. The inclusion of punitive measures signifies a shift towards a more structured approach to governance as well, where medical practitioners are held legally responsible for their actions.

Kautilya emphasised the importance of medical examination in cases of unnatural death and advocated moral principles for physicians. The goal of Kautilya's *Arthashastra* was to uphold civil and criminal law, foreign policy, and justice — crimes such as extortion, violence, adultery, false evidence, abortion, infanticide, and sexual transgressions were all punishable by death. Kautilya formulated a "Danda Niti," incorporating laws and procedures around the administration of punishment [6]. He emphasised the importance of accountability and ethical behaviour for medical practitioners, detailing consequences for negligence or unethical behaviour. The *Arthashastra* frames the role of the physician within the broader context of state responsibility, suggesting that the welfare of the populace is a crucial concern that must be safeguarded

through regulation and governance [7]. As societies progressed, the need to legally regulate professional conduct in the healthcare system became evident, laying the groundwork for what we now term Vidhi Vaidyaka, or medical jurisprudence.

In the colonial era, the British introduced formal medico-legal systems. The first recorded forensic autopsy in India was performed in 1693 by Dr Edward Bulkely in an alleged arsenic poisoning case. Post-Independence, a series of laws was enacted to integrate Ayurveda with the national health framework. The Indian Medicine Central Council Act of 1970 established statutory regulations for Ayurveda [8]. On June 11, 2021, NCISM was established under the NCISM Act, 2020, through a September 21, 2020, gazette notification extraordinary, part (ii), section 3(ii). Its aim was to guarantee transparency. The NCISM replaced the previous regulatory body, the Central Council for Indian Medicine [9]. As mentioned earlier, it thoroughly revamped the BAMS curriculum.

The field of Agada Tantra (toxicology, medical jurisprudence, and forensic sciences in Indian medicine) has made significant progress since the 15th century. Initially, Agada Tantra was not taught as a stand-alone specialisation; but was included as a unit within the broader discipline of Kayachikitsa (general medicine). A three-year postgraduate training programme for the Doctor of Medicine (MD) degree (Ayu) in Agada Tantra was first instituted in Maharashtra in 1996. Subsequently, this programme was introduced in several other states. The introduction of postgraduate programmes in Agada Tantra represents a significant step toward reviving its lost glory and restoring its clinical relevance [10,11]. The Department of Ayurveda, Yoga and Naturopathy, Unani, Siddha, and Homoeopathy (AYUSH), under the Ministry of Health and Family Welfare, and the Central Council for Research in Ayurvedic Sciences have, since 2003, prioritised toxicological studies of Ayurvedic drugs, incorporating them into the national pharmacovigilance programme in 2010 under the Central Drugs Standard Control Organisation. However, although this integrated Ayurveda with mainstream medicine, the practice of Agada Tantra in toxicology and poisoning cases was sidelined. Acts such as the Drugs and Cosmetics Act, 1940 [12], the establishment of the NCISM and the upgradation of the Department of AYUSH to the Ministry of AYUSH helped reinstate Agada Tantra.

Curriculum and course structure

BAMS is a 5.5-year undergraduate programme. Currently, the curriculum is divided into three professional courses, focusing on specific disciplines, of 1.5 years each. In the second of these, professional students delve into the subject termed as Agada Tantra evam Vidhi Vaidyaka. In some institutions, Agada Tantra evam Vidhi Vaidyaka is also offered as a master's course, allowing students to further specialise in it [13,14].

The NCISM has consistently updated the curriculum to keep pace with evolving educational standards. Recently, in alignment with the New Education Policy (NEP) 2020, the NCISM implemented significant changes in both the curriculum and the teaching methodologies, marking a revolutionary step in Ayurveda education. The new curriculum for undergraduate Ayurveda programmes is designed to develop a broad range of skills in students. Key components include a transitional curriculum, electives, integrated learning, early clinical exposure, and problem-based learning. In the fields of forensic medicine and medical jurisprudence, the curriculum now incorporates the latest advances, with a greater emphasis on practical, hands-on learning rather than purely theoretical instruction. Mandatory components now include visits to courts, forensic science laboratories, and hospital medical record sections, as well as participation in autopsies. However, despite these progressive initiatives by the governing bodies, there are still several challenges that need to be addressed [15].

Contemporary ethical dilemmas in the practice and teaching of Vyavahara Ayurveda and Vidhi Vaidyaka

Agada Tantra, Vyavahara Ayurveda and Vidhi Vaidyaka are integral parts of the curriculum in the Ayurvedic system. However, contemporary practice and pedagogy face numerous ethical and legal challenges arising largely from the disconnect between extensive theoretical instruction and limited practical training, compounded by regulatory exclusions. While the NCISM's revised BAMS curriculum (2021–22) integrates robust forensic education, including medico-legal concepts parallel to those taught in MBBS programmes, practical application remains severely restricted. These disparities raise ethical concerns regarding fairness, professional equity, and systemic discrimination.

A nationwide survey involving over 2,100 Ayurvedic students and practitioners revealed that 85% had never conducted an autopsy and fewer than 7% had issued medico-legal certificates or served as expert witnesses [16]. Despite their formal training, Ayurvedic graduates are legally barred in many states from performing post-mortems or issuing medical fitness and death certificates, duties routinely expected of their allopathic counterparts. This disconnect between education and permitted practice infringes on the ethical principles of justice and professional autonomy [16].

Additionally, a qualitative study by Aakash Patel [17] has highlighted further issues that Ayurvedic physicians often face — ambiguity about their legal responsibilities, lack of awareness of their rights under state laws, and limited access to continuing medical education in Agada Tantra. Disparities across institutions also affect clinical training — states such as Maharashtra, Karnataka, and Kerala provide

exposure through court visits, while others lack basic forensic infrastructure. Such inconsistencies result in unequal learning experience, breaching the principle of educational uniformity [17].

The national survey reveals that while Ayurvedic institutions occasionally facilitate court and autopsy visits, these are neither uniformly mandated nor properly assessed [16,17]. In fact, very few training centres offer real-world medico-legal training. Thus, although 75% of students undertake postgraduate studies in Agada Tantra, fewer than 10% engage in medico-legal practice. This gap reflects systemic inertia and ethical dissonance. The NCISM has introduced forensic content in the BAMS curriculum comparable with that of MBBS programmes; however, this has not translated into functional legal authority, as most criminal law and procedural codes like Bharatiya Nagarik Suraksha Sanhita, 2023, and Bharatiya Nyaya Sanhita, 2023, still implicitly reserve medico-legal duties for MBBS doctors, as discussed later. Ayurveda practitioners are barred from engaging in medico-legal work such as autopsies or issuing legal documents. This exclusion, especially when Ayurveda practitioners are formally trained in these areas, constitutes a structural injustice, leading to professional inequity and regulatory disenfranchisement.

Bridging gaps: Empowering BAMS graduates in forensic medicine

The NCISM's revised curriculum for BAMS from 2021–22 onward now includes comprehensive study of forensic medicine and medical jurisprudence, mirroring the way these subjects are taught in the MBBS curriculum. BAMS students receive extensive education in these subjects and during their training are expected to gain expertise in the following:

- applying the basic concepts of forensic medicine to real-world scenarios;
- recognising and valuing recent research that pertains to these fields;
- applying forensic medicine expertise to healthcare promotion and social awareness;
- applying professional forensic medicine skills to medico-legal issues;
- and performing ethically and professionally their medico-legal duties and responsibilities in accordance with the law of the land.

In this new curriculum, approximately 85 of the total 300 teaching hours are allocated to Agada Tantra, and another 85 (approximately) each to Vyavahara Ayurveda and Vidhi Vaidyaka — comprising lectures, non-lecture sessions, and practicals. Of these, 60 hours are specifically reserved for practical training and field visits. This foundational knowledge is further expanded upon in the MD syllabus for Agada Tantra [18].

Students are trained, both theoretically and practically, like their MBBS counterparts, in the legal procedures for medico-legal documentation — including hands-on training in the preparation of records such as medical and medico-legal reports, fitness and sickness certificates, birth and death certificates, and other relevant medical and medico-legal certificates; leaving against medical advice; discharge against medical advice; discharge on patient request; as well as inquest, evidence, witness, summons, procedure of recording of evidence in a court of law, and conduct of a medical professional in a court of law. Detailed study of thanatology, injury, wound analysis, and the medico-legal implications of asphyxia, drowning, and various forms of violence, such as sexual assault and rape, abortion, and hurt and grievous hurt, are included in the curriculum. Study of the relevant laws, Acts, rules, and regulations is also incorporated.

Students are made to watch the procedure for medico-legal autopsy, taught the nuances of post-mortem changes, instructed in the preparation of autopsy reports, and required to draft an injury report. There may also be mandatory field visits, including court visits and trips to forensic science laboratories, where they can observe modern methods and techniques such as polygraphy, narcoanalysis, and DNA profiling. Hands-on training in forensic lab work and toxicological analysis, and observational learning in hospitals and forensic departments are also included in the curriculum.

Students also learn the intricacies of toxicology, including the identification, diagnosis, and treatment of poisons, as well as the medico-legal aspects of poisoning cases. The curriculum extends to forensic psychiatry, focusing on the legal implications of psychiatric conditions. Importantly, alongside classical Ayurveda texts, students are also taught from standard modern textbooks — selected from a list provided in the reference books/resources section of the new NCISM course curriculum. Thus, their training is on par with that of MBBS undergraduates in both content and rigour. With their thorough grounding in both traditional and modern forensic practices, Ayurvedic doctors are well equipped theoretically to contribute effectively to forensic investigations.

In postgraduate programmes in modern medicine, students are required to conduct a minimum of 100 autopsies and engage with 100 clinical cases during their training period. Additionally, these trainees must respond to court summons for cases they have seen or when an expert is required to testify in court. They are expected to attend, or accompany an expert to, at least 20 court hearings, with a minimum of five related to their clinical cases. This broad practical exposure ensures that they are well prepared to handle medico-legal issues and provide expert testimony in legal proceedings [19,20].

However, postgraduate Ayurveda students often do not receive this level of practical training for several reasons. District hospitals may be unwilling to allow Ayurveda practitioners to participate in such training. There are often no clear guidelines from governing authorities regarding the involvement of Ayurveda practitioners in medico-legal cases. The only effective way to train either undergraduate or postgraduate scholars in forensic medicine is to provide them with practical exposure to real-world case scenarios, which is currently available only to practitioners with an MBBS or MD degree in modern medicine. If postgraduate Ayurvedic students were given similar opportunities for practical training, they would make a significant contribution to the discipline of forensic medicine. A comprehensive education in forensic medicine and medical jurisprudence, combined with practical experience, would enable them to handle medico-legal cases with the same proficiency as their counterparts in modern medicine. This would not only enhance their professional capabilities but also promote a more inclusive and integrated approach to healthcare.

Challenges in forensic medicine and medical jurisprudence: The need for practical and academic synergy

This section discusses the multifaceted challenges confronting Ayurveda graduates and postgraduates (Agada Tantra evam Vidhi Vaidyaka), including limited clinical and practical exposure in handling medico-legal cases, existing policy gaps within India's forensic ecosystem, ambiguity surrounding medico-legal responsibilities, dilemmas faced by academicians, and infrastructural shortcomings in Ayurveda colleges. These challenges underscore the urgent need for coherent regulatory reforms, strengthening institutional collaborations, and policy-driven integration of practical training mechanisms to ensure meaningful academic-clinical synergy and to enhance the professional competence of Agada Tantra scholars in medico-legal practice.

Limited clinical and practical exposure in handling medico-legal cases

Despite being important branches of the study curriculum in Ayurveda, forensic medicine and medical jurisprudence do not offer adequate opportunities for practical exposure and application to Ayurveda students and practitioners. Hands-on experience in clinical settings does not alone meet the expectations outlined in the syllabus. The portions on forensic medicine and medical jurisprudence comprise a major percentage of the syllabus of the subject Agada Tantra Evam Vidhi Vaidyaka. However, students are not permitted to handle medico-legal cases, conduct autopsies, or issue medical certification of cause of death (MCCD) or other relevant certificates and reports during their clinical practice. Autopsies or post-mortem examinations are typically conducted by forensic pathologists — medical practitioners who have specialised training in pathology and forensic medicine. Currently, forensic pathologists or medical

practitioners holding an MBBS or MD degree with *any* specialisation are authorised to perform autopsies and post-mortem examinations in India. However, the current medical and legal standards in India exclude Ayurveda practitioners with expertise in Agada Tantra from participating in forensic investigations. With the recent curriculum updates by the NCISM, and the absence of explicit legal prohibitions, there is a compelling case for re-evaluating this stance.

A policy gap in India's forensic ecosystem

India faces a major deficit in accurate death certification, with only around 10% of deaths being medically certified. This shortfall, as highlighted by Geeta Gupta and Yogesh Gupta [21], hampers public health planning and research, and legal justice. One key reason for this is the limited number of medical autopsies — further compounded by a restrictive legal framework that excludes Ayurveda practitioners despite their forensic education under the NCISM curriculum.

This exclusion becomes ethically and practically significant when juxtaposed with global practices. During the Covid-19 pandemic, countries that conducted autopsies gained early insights into disease progression. India, lacking a strong autopsy culture and inclusive medico-legal workforce, was slower to adopt life-saving interventions. Enhancing the death registry system with proper autopsy data would help prioritise research, allocate healthcare resources efficiently, and improve treatment guidelines that are tailored to India's population, making it not just an educational issue but a health rights and public health imperative [21]. Empowering Ayurveda practitioners in medico-legal roles would help address workforce shortages, enhance the accuracy of the death registry, and improve access to justice.

Dilemma for academicians

The constricted work status of Agada Tantra-trained practitioners of forensic medicine creates a significant dilemma for academicians involved in its teaching and application, given the ambiguous legal provisions, the traditional boundaries of Ayurveda practice, and the evolving curriculum, which now includes forensic training. Academicians thus face a dual challenge. On the one hand, they must ensure that students receive a comprehensive and relevant education that aligns with the latest curriculum changes. On the other, they grapple with the uncertainty about whether their students will be able to apply this training in real world forensic settings. This dilemma affects their motivation to impart a robust education in the forensic aspects of the subject and impacts the confidence of students pursuing this specialisation, leaving them apprehensive about their future professional roles and career prospects. Indeed, this may deter potential candidates from specialising in Agada Tantra evam Vidhi Vaidyaka, fearing limited professional opportunities despite their advanced training. This hesitation, in turn, affects the

Table 1. Legal scope: MBBS vs BAMS

Procedure and legal framework	Allopathic doctor (MBBS/MD)	Ayurvedic doctor (BAMS)
Conducting autopsies per BNSS Sec 194–196	Legally permitted	Not permitted (de facto denial)
Rape survivors' medical examination per BNSS Sec 184	Permitted	Excluded per the IMC Act
POCSO survivors' medical examination per Sec 27 of the POCSO Act	Female MBBS graduate preferred	Ambiguous status/unrecognised
Preparing death certificates per the Births and Deaths Act	Permitted	Permitted (if deceased's attending doctor)
Legal certification under the IMC Act vs NCISM Act	Full recognition	Partial: lacks status for forensic procedures like medico-legal autopsies, medical examination of the accused/ victim, etc.
<p><i>Source: Authors' compilation</i></p> <p><i>BNSS: Bharatiya Nagarik Suraksha Sanhita; POCSO: Protection of Children from Sexual Offences Act; IMC: Indian Medical Council; NCISM: National Commission for Indian System of Medicine</i></p>		

growth and evolution of this Ayurvedic discipline, particularly in areas where it could contribute significantly [22].

Facility shortcomings in Ayurveda colleges and overlooking the value of field visits in forensic training

Undergraduate and postgraduate teaching alone is insufficient to equip students to take up medico-legal responsibilities, highlighting the need for more practical exposure. In forensic medicine and medical jurisprudence, professionals are tasked with interpreting injuries, determining the cause of death, conducting autopsies, and providing expert testimony in court — duties that require a high level of practical expertise and experience. This practical training can take place under the supervision of an experienced forensic expert [23].

Many Ayurveda colleges face significant challenges in forensic training due to a lack of dedicated Agada Tantra clinical wards and autopsy facilities. This often forces students to rely on visits to nearby medical colleges, where access to autopsies is mostly denied or limited. Moreover, despite this being required by the syllabus, many colleges fail to organise essential court, mortuary, and forensic lab visits.

Currently, no Ayurveda practitioners are involved in forensic investigation. This dependence of Ayurveda colleges on mainstream medical hospitals makes it challenging to ensure adequate practical training, as it is entirely contingent on the willingness and approval of those hospitals or specialists. These gaps result in students receiving inadequate practical exposure, leaving them underprepared and lacking confidence in handling medico-legal cases. It is crucial to address this issue to ensure that Ayurveda graduates are fully equipped to meet the demands of forensic practice. Furthermore, the lack of practical exposure perpetuates a disparity between Ayurveda practitioners and their counterparts trained in modern medicine, who typically receive more extensive and consistent practical training in forensic disciplines. This disparity not only affects the

professional development of Ayurveda graduates but also impacts the broader acceptance and recognition of Ayurveda practitioners in medico-legal roles [16].

Legal provisions

India's medico-legal framework is governed by multiple statutes, with specific rules regarding who is permitted to conduct medico-legal procedures such as autopsies, prepare medico-legal reports, and perform medical examinations in cases of sexual violence [see Table 1]. Many laws use generic terms such as "registered medical practitioner," which in practice implies allopathic doctors with an MBBS/MD degree.

The Bharatiya Nagarik Suraksha Sanhita, 2023

Section 194 of the Bharatiya Nagarik Suraksha Sanhita (BNSS), 2023 [24] corresponds to Section 174 of the former Code of Criminal Procedure (CrPC), 1973 [25], outlining the procedure for investigating and reporting deaths, including the requirement for post-mortem examinations (autopsies) in cases of suspicious or unnatural death. Section 196 of the BNSS [24] (corresponding to Section 176 of the CrPC [25]), deals with inquiries by magistrates into the cause of death. Subsection (3) of Section 194 and Subsection (6) of Section 196, of BNSS, use similar terms, such as "Civil Surgeon, or other qualified medical person appointed in this behalf by the State Government," [24]. While the BNSS does not explicitly mention the MBBS and MD degrees, it is understood that it recognises as "qualified" medical practitioners only those with mainstream medical degrees and training in forensic medicine.

Medical examination of an accused is conducted as per Sections 51–53 of the BNSS [24], which correspond to Sections 53, 53A, and 54 of the CrPC [25]. Section 164A, inserted in the CrPC by the 2005 Amendment Act, now Section 184 of the BNSS [24], made specific provision for the medical examination of survivors of rape or attempted rape

to be done by a “registered medical practitioner”. The explanation to section 51 clause (b) of BNSS [24] states that a “registered medical practitioner” means a medical practitioner who possesses any medical qualification recognised under the National Medical Commission Act, 2019, and whose name has been entered in the National Medical Register or a State Medical Register under that Act.

Even the Protection of Children from Sexual Offences Act (POCSO Act), 2012, stipulates in Sec27(2) that only a woman doctor may perform the medical examination of a female child, in respect of whom an offence has been committed [26].

However, in all the above-mentioned provisions of law, it is noteworthy that the status of trained BAMS practitioners/post-graduates in Agada Tantra evam Vidhi Vaidyaka is still unclear.

The Indian Medical Council Act, 1956

The Indian Medical Council (IMC) Act primarily governs the regulation of modern medicine in India. Section 15 emphasises that only individuals with recognised medical qualifications who are registered with the Medical Council of India (now the National Medical Commission) or a state medical council are legally permitted to practise medicine [27]. This includes performing medical procedures, including autopsies.

The Indian Medical Degrees Act, 1916

This Act governs the use of medical titles and qualifications, ensuring that only those with recognised degrees can perform specific medical functions. Autopsies, being complex medical procedures, are only assigned to those with proper medical and forensic training [28].

The Registration of Births and Deaths Act, 1969

The MCCD is issued under Subsections (2) and (3) of Section 10 of the Registration of Births and Deaths Act, 1969, by “the medical practitioner who has attended the deceased in his/her last illness” [29]. This could also be an Ayurvedic doctor.

In a report dated December 23, 2020, by a committee of the IAFM tasked with putting forth suggestions for amendments to Section 174 of the CrPC, to improve the quality of forensic and medico-legal post-mortem services in India, loopholes and concerns were highlighted in Annexure V [30]. The report mentions that one of the main issues is that

In India, around 80-90 % Post-mortems are carried out by untrained doctors. Mostly carried out by plain MBBS doctors, medical officers, gynaecologist, paediatricians, surgeons, etc without having any training in Forensic Medicine. This practice has resulted into horrendous quality of postmortem examination and mockery of administration of justice. [30: Annex V, p 75]

Attendants/ Sweepers assist the doctors to carry out the post-mortem examinations, collections of viscera and other forensic evidence from the body, its sealing and labelling etc. They do not have any special training for such work [30: p 26]. The report said the following amendment is required:

Law must prescribe the minimum qualification and training in forensic medicine that a medical practitioner should have to carry out a forensic post-mortem examination. The law must prescribe that trained staff in forensics shall assist the doctors in carrying out post-mortem examinations [30: Annex V].

On April 26, 2023, the apex court of India, in the appeal of the *State of Gujarat and Ors etc v. Dr. PA Bhatt and Ors. etc*, addressed the question of pay parity between allopathic and Ayurvedic doctors. The judgment noted that an autopsy or post-mortem is never performed before Ayurvedic physicians [31: paras 50-51]. Under CrPC, a magistrate’s inquiry into unnatural fatalities requires the presence of a civil surgeon [25: Sec 176], reinforcing the judicial perception that medico-legal duties fall outside the scope of Ayurvedic professionals’ expertise [31].

In a writ petition filed by RM Arun Swaminathan before the Madurai bench of the Madras High Court on September 28, 2020 [32], the petitioner highlighted deficiencies and irregularities in the conduct of autopsies, including a shortage of qualified forensic medical experts, leading to improper procedures [32]. It was revealed that unauthorised personnel, such as attendants and sweepers, often conduct dissections, while doctors failed to follow the guidelines of the National Human Rights Commission of India in this regard. The court also found these allegations troubling, particularly the claim that a single doctor could conduct up to 17 autopsies in a day — a workload that made thorough examinations impossible.

The court stressed that the integrity of medico-legal autopsies is crucial, as the findings directly influence the outcomes of criminal cases. Any negligence or failure to follow proper procedures could jeopardise the criminal justice system [32]. Therefore, the court ordered the Tamil Nadu government to implement corrective measures. It mandated the appointment of “scientific officers” in all government medical college hospitals and district headquarters to assist medical professionals during medico-legal autopsies and ensure that proper procedures are followed. The court also directed the government to form a committee of experts to define the qualifications and duties of the scientific officer. The committee of experts was to consist of experts in forensic science, criminology, medical examination, and other fields, as may be suggested by the forensic department [32].

This ruling underscored the need for rigorous adherence to proper autopsy procedures and the involvement of qualified

personnel to maintain the integrity of medico-legal investigations, ultimately safeguarding the justice system.

Recent developments and hopes for the future

Recent advancements in Ayurveda practice in India mark significant milestones in integrating traditional medicine with the mainstream healthcare system. Notably, the Indian Medicine Central Council (Post Graduate Ayurveda Education) Amendment Regulations, 2020, grant postgraduates in Shalya and Shalakyas the right to be practically trained in 58 specific surgical procedures, to ensure independent competency in conducting such surgeries without supervision post-degree completion [33]. In 2022, the NCISM allowed registered medical practitioners of Ayurveda, Siddha, Unani, and Sowa-Rigpa to issue medical fitness certificates, highlighting the increasing acceptance and credibility of Ayurveda [34].

Building on these progressive measures, permitting Ayurvedic doctors specialising in Agada Tantra evam Vidhi Vaidyaka to conduct autopsies and related forensic work would be highly beneficial. Training these specialists, who have sufficient theoretical background, to directly handle medico-legal cases and gain essential hands-on experience will enhance their skills.

Recommendations

There is a pressing need to allow Ayurveda practitioners specialising in forensic medicine and medical jurisprudence to conduct autopsies, issue injury certificates, perform medical examinations of accused persons and survivors in cases of sexual and other related offences, and engage in other related forensic work. With the recent curriculum updates, these practitioners are now trained to a level comparable with their MBBS counterparts, ensuring that they possess the necessary theoretical knowledge and required skills. Empowering them with more practical exposure and aggressive hands-on training will certainly help meet the requirement for more forensic experts, especially in rural areas. Allowing them to participate in forensic procedures would also help eliminate the perceived hierarchical gap between practitioners of Ayurveda and modern medicine.

Despite their comprehensive training, however, Ayurveda practitioners often lack practical exposure, which is essential for developing their forensic expertise. At the same time, the low number of postgraduate trainees in forensic medicine within modern medical science institutions, combined with the increasing demand for forensic experts due to a rise in medico-legal cases, highlights the need for a larger workforce in this field. Moreover, career opportunities for Ayurvedic postgraduates are typically limited to academics, restricting their professional growth. More practical training opportunities for Ayurvedic practitioners, towards enhancing their forensic expertise, could address both concerns.

There is a need for systemic improvements in the infrastructure and educational practices of Ayurveda colleges. Establishing dedicated Agada Tantra wards, ensuring regular access to autopsies, and arranging mandatory field visits to courts and forensic labs would significantly enhance the practical training of Ayurveda students. By providing comprehensive and consistent exposure to forensic procedures in practice, Ayurveda colleges can better prepare their students to competently and confidently engage in medico-legal work, thereby strengthening the overall quality and credibility of forensic practitioners of Ayurveda. Notably, several Ayurvedic colleges already offer their students field visits and hands-on experience in medico-legal settings wherever feasible — instituting a model for operationalising reform. In addition, the union government's proposal to introduce an integrated MBBS–BAMS programme at the Jawaharlal Institute of Postgraduate Medical Education and Research marks a progressive step towards interdisciplinary learning [35]. Although still in its conceptual phase, the initiative reflects a growing institutional will to integrate modern and traditional medical sciences through a revised curriculum. These developments, if replicated and scaled, could produce important operational models for bridging the gap between policy and practice in Ayurvedic forensic education [36].

Bridging the gap between modern and Ayurveda practitioners by providing practical training and embracing interdisciplinary studies, as encouraged by the NEP 2020, is crucial. As AYUSH continues to expand and district hospitals begin to create positions for Ayurvedic doctors, recognising their qualifications for forensic work becomes increasingly important. Additionally, many district hospitals face challenges in conducting autopsies due to infrastructural limitations and a shortage of practitioners. Empowering Ayurvedic doctors to perform these tasks could help alleviate these issues. To achieve this, clear guidelines and government support are essential. This approach would not only enhance the professional capabilities of Ayurveda practitioners but also promote a more inclusive and integrated healthcare system. There is also a need to amend the laws cited in Table 1 to allow certified Ayurvedic doctors to perform autopsies and do other medico-legal work.

In the original Ayurvedic literature, such as the *Samhitas*, there is no mention of conducting autopsies; this practice emerged in the modern era and is detailed in contemporary medical textbooks, which the students in Ayurveda colleges also study in their undergraduate or postgraduate programme. Since post-mortems are performed on deceased bodies, the autopsy procedure is identical in both systems, with the key requirement being a thorough knowledge of anatomy, forensic medicine, and pathology. In response to the writ filed by RM Arun Swaminathan, the court emphasised that conducting an autopsy is a collective effort, with the forensic doctor leading a team of four to six

skilled individuals, including technicians and mortuary attendants, to ensure that the procedure is carried out properly [32]. With this background, it would be pertinent to hope that a trained BAMS/ MD graduate in Ayurveda may also be a part of this skilled team.

Limitations

This analysis relies on publicly available documents and literature, which may not capture recent or unpublished policy shifts at the institutional level. While empirical data such as the 2021 nationwide survey and the 2020 IAFM report support the findings, additional ground-level data would further enhance the practical insights gained. No primary fieldwork, surveys, or interviews were conducted for this study.

Conclusion

To address the pressing issue of a shortage of forensic medical professionals in India, an integrative approach would motivate and train Ayurveda practitioners and expand their scope of practice. By integrating Ayurvedic doctors into roles traditionally reserved for allopathic practitioners, the healthcare system can become more robust and inclusive. This decision would ensure a more comprehensive approach to medical education and practice, fostering a collaborative environment between different branches of medicine.

Ultimately, such measures would lead to improved healthcare services for the populace, leveraging the strengths of both traditional and modern medical practices. Extensive training in forensic medicine becomes ineffective unless paired with practical clinical application. Without hands-on experience, the theoretical knowledge gained through hours of teaching cannot be effectively translated into real-world skills. Practical training is essential for students to fully understand and apply what they have learned, ensuring that they are prepared to handle the complexities of medico-legal cases with confidence and competence.

Therefore, allowing Ayurvedic doctors specialised in Agada Tantra evam Vidhi Vaidhyaka to conduct autopsies and other medico-legal tasks would fill a critical gap in forensic medicine, and the field would gain from their rigorous integrated training. Such inclusion would not only align with the NEP 2020 but also leverage their expertise in toxicology, fill regulatory gaps, and enhance the comprehensiveness of post-mortem examinations. This would also address the current shortage of such experts, benefitting both medical and legal communities.

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