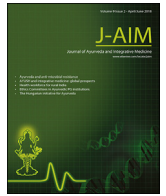




Contents lists available at ScienceDirect

Journal of Ayurveda and Integrative Medicine

journal homepage: <http://elsevier.com/locate/jaim>

Review Article

Allopathic, AYUSH and informal medical practitioners in rural India – a prescription for change

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ARTICLE INFO

Article history:

Received 3 April 2018

Received in revised form

9 May 2018

Accepted 9 May 2018

Available online 29 May 2018

Keywords:

Health workforce

Rural India

Unqualified practitioners

ABSTRACT

This paper looks at the treatment seeking behaviour of rural households and presents factors that discourage them from using public health facilities. It also brings out how Allopathic medical graduates as well as institutionally qualified AYUSH doctors predominantly offer services in cities and townships which results in lakhs of village households having to depend on unqualified medical practitioners as the first line of medical treatment; also how this situation will continue unless the approach to providing medical treatment is modified. Continued dependence on unqualified practitioners is fraught with dangers of incorrect diagnosis, irrational drug use, resulting in the spread of multi-drug resistance. The reality that surrounds Allopathic practice by AYUSH doctors has also been described along with the educational underpinnings of accepting this approach.

We opine that existing state policies that legitimise Allopathic practice by non-Allopathic practitioners do not help the rural poor to access proper medical treatment for acute conditions. Also, it does not enhance the credibility of the indigenous systems of medicine among which Ayurveda is the dominant system. First, we position our views in the context of the recently introduced National Medical Commission (NMC) Bill 2017 and provisions which call for the assessment of the need for human resources for health and building a road map to achieve the same. Second, we advocate re-inventing the pre-independence system of trained medical auxiliaries enrolled on a new schedule of the respective state medical register, authorised to give immediate medical treatment and making informed referrals for further diagnosis or specialised treatment. Finally, we recommend reinforcing the AYUSH systems to tackle emerging non-communicable diseases which are affecting all population cohorts adversely and, in whose prevention and management, the AYUSH systems are reported to possess special skills and competence.

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1. Introduction

This paper analyses the situation of rural health care providers and the place of qualified Allopathic doctors and AYUSH¹ practitioners within that setting. As the social determinants play a huge role in deciding ill health and people's subsequent treatment

choices, it is important to pay attention to those factors while devising how medical treatment in rural areas can be improved.

The rural–urban distribution of Indian population according to 2011 census is 68.84% and 31.16% respectively [1]. Of the 244 million households, more than 179 million are rural and of these, over 55% live in a single room made of mud and straw. In terms of economic status more than half of this population is engaged in manual labor and are poor [2]. Lack of access to clean drinking water, poor sanitation, water logging and household pollution continue to cause waterborne, vector borne and respiratory diseases among such populations despite communicable diseases having declined overall in the period 1990 to 2016 [3].

The 2018 budget announcements and several ongoing initiatives like the AIIMS type hospitals, the newly announced Ayushman

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Peer review under responsibility of Transdisciplinary University, Bangalore.

¹ In this paper wherever the acronym AYUSH appears it refers primarily to Ayurveda which accounts for the largest among all the AYUSH systems and refers to Unani and Siddha systems only by inference; it does not refer to Homeopathy, or to Yoga or Naturopathy.

Bharat programme which includes the National Health Protection Scheme (NHPS) and the establishment of Health and Wellness Centres aim at providing the vulnerable sections of the population access to free diagnostic services and hospital treatment. These strategies, it is argued in the paper will not help in tackling a wide range of acute ambulatory illnesses which need immediate medication and constitute the largest share of day-to-day out-of-pocket expenses incurred by the rural poor. These conditions not only include acute diarrhoea, vomiting, respiratory congestion and extreme fatigue but also undiagnosed patients of malaria, dengue, encephalitis, tuberculosis, HIV/AIDS, latent hypertension and diabetes. Among poor households, such conditions remain unrecognized because qualified diagnosis and treatment is only resorted to after availing a series of failed treatments from unqualified practitioners.

In this paper, we demonstrate the need to address the stark deficiencies in the availability of trained medical manpower at the village level, a situation that prevails all through the country and the extreme paucity of proficient health workers capable of meeting the immediate needs of the bulk of people. This has been displayed with reference to the spatial data of village populations and their distance from qualified doctors—a situation which is unlikely to change in the foreseeable future.

The findings are derived from published health data, secondary research, and a combination of the first author's long experience of working at a policy level in the health sector and the second author's research and teaching experience of Ayurveda education [See Box-1 for an explanation of the term AYUSH].

Based on these findings, we propose specific steps needed to fill the widespread gaps that exist at the village level mainly attributable to non-availability of medical personnel and the long distances involved in getting medicine, quickly and cheaply.

The approach has been linked to the framework of the National Medical Commission (NMC) Bill 2017 and the recent recommendations of the Parliamentary Standing Committee (PSC) and the subsequent decisions reported to having been taken by the Union Cabinet thereon [4,5]. The forthcoming parliamentary debate before the law is enacted presents an opportunity to engineer a shift in providing medical treatment at the village level. The lack of

compatibility between what is available in the existing primary health system and the felt needs of the rural poor poses as the biggest challenge.

2. The scenario of healthcare in rural villages

2.1. Services provided by the public health sector

Public health services are provided by state Governments through a hierarchy of Sub-centres, Primary Health Centres (PHCs), Community Health Centres (CHCs) and District hospitals. All published studies including those available on the Health Ministry's Rural Health Statistics portal and displaying the spatial mapping of health centres show how the majority of villages are located several kilometers from a PHC—the first level where a Government doctor is posted. Recent Government data show that country-wide there are over 20% vacancies of doctors in the PHCs which do not take into account high levels of absenteeism among doctors and support staff [6]. According to the erstwhile Vice-Chairman of the Niti Aayog, “the rampant employee absenteeism happens to be the primary culprit (among others such as poor state of infrastructure and inadequate supply of drugs and equipment) that discourage people from seeking health services provided by the Government system. Across the country, the average absentee rate is reported to be 40%.” (As paraphrased from the original article referenced) [7]. At a level above the PHCs there are CHCs or sub-divisional hospitals which are expected to be manned by medical specialists. The vacancies in the CHCs are to the tune of over 65% [6].

Established from the nineteen eighties, the PHCs were expected to provide health and medical services to a satellite population of 20–30,000 people. Today there are some 25,800 PHCs in the whole country and cover over 6 lakh villages. The first line public sector health worker is an Auxiliary Nurse Midwife (ANM) who is in charge of one Sub-centre catering to a population of 5000 (2000 in hilly areas) but she does not stock nor does she have the authority to dispense or treat with medication needed for acute illnesses – not even uncontrollable vomiting, diarrhea, and severe respiratory afflictions. Drugs which fall under Schedule H and H1 of the Drugs and Cosmetics Act 1940, of which there are nearly 600 drugs listed, can only be used/prescribed by a medical practitioner enrolled on the Central or State Medical register maintained under the provisions of the MCI Act-1956 and the Drugs and Cosmetics Act 1940. That in short means an Allopathic practitioner and no one else.

For the working-class population living in villages, (mostly engaged in manual labour) the distances are long and the opportunity cost of seeking treatment from a regular, qualified PHC doctor is too high, because the cost of transport, the time factor and loss of daily wages collectively outweigh the gains. With added deterrents like possible absenteeism and reported non-availability of drugs which pervade public health facilities, it is unproductive for poor families to visit the PHC to get treatment for acute illnesses.

2.1.1. Peripheral role of Sub-centres and PHCs on account of distance

Since Government doctors are posted only at the PHC level which are located at the block or taluka level, more than two thirds of the village are located more than 5 or even 10 km away from a PHC.

The district maps supported by the names of the talukas and villages along with their populations and distance from the nearest PHC based on the census 2001 data are available on the website of Jansankhya SthirataKosh (JSK) [8]. The maps show the number of villages in 593 rural districts and the distances to be travelled to reach the nearest PHC doctor.

Box-1

AYUSH: A Contextual Explanation.

- In Government terminology and in common parlance the acronym AYUSH denotes Ayurveda, Yoga, Unani, Siddha and Homeopathy.
- Ayurveda, Unani and Siddha (AUS) systems of medicine come within the ambit of the standard setting/recognition/enrolment functions performed by the Central Council of Indian Medicine (CCIM), a statutory organization established by a central enactment.
- The Sowa Rigpa or Amchi system is popular in the Himalayan region of India and was included in the regulations of CCIM in 2011.
- Yoga and Naturopathy are two therapies which have a large number of committed followers throughout the country. Various Universities, institutions and organisations grant their own degrees/certificates to the practitioners. However, they are not enrolled on any central medical register as medical practitioners.

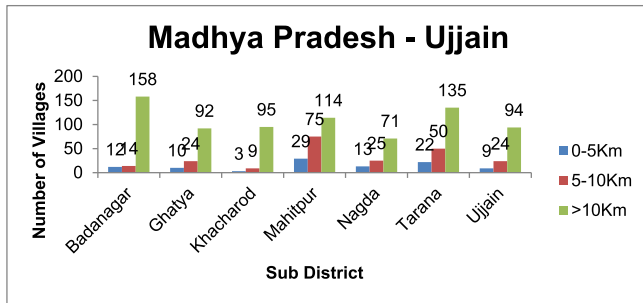


Fig. 1. This representative chart illustrates the distances involved in accessing a public sector medical facility in Ujjain district of Madhya Pradesh.

Fig. 1 is an illustrative diagram displaying the number of villages in each sub-division in the case of Ujjain district of Madhya Pradesh and the distance to be travelled to reach the nearest PHC. The diagram gives the position as available in the 2011 census and was provided by the National Informatics Centre (NIC) under the Ministry of Electronics and Information Technology on request as the census data has undergone change over 10 years. NIC provided updated maps as per the 2011 census. Whether one looks at the maps relating to 2011 census or JSK's maps of 2001 census the distances continue to be very long. This is understandable as the number of PHCs has not increased with time.

2.2. Role of AYUSH doctors in the rural public sector

Although it is argued that AYUSH doctors fill the health manpower gaps in rural areas, the actual picture is quite different. The estimates based on National Sample Survey data suggest that the density of AYUSH practitioners is 7 times higher in urban areas compared to rural areas where the mean density of AYUSH practitioners per 10,000 population happens to be only 0.2 [9]. The public sector BAMS doctors are posted as District Ayurveda officers managing AYUSH dispensaries. These dispensaries are highly dispersed and maintained relative to a state's interest and commitment to provide AYUSH services. Visits to such AYUSH dispensaries in different states showed very low outpatient attendance and the facilities were of little use to a village household suffering from acute medical conditions [10].

After the National Rural Health Mission commenced in 2005 AYUSH graduates were engaged on contract basis and posted in PHCs with the justification that they would provide AUS treatment [11]. Over time these contractual AYUSH doctors began to be utilised as assistants to the medical officer in charge of PHCs. Later, they began to be posted as the sole in-charge of remotely located PHCs where modern medicine doctors refused to go. The factum of having accumulated this experience has often been argued as evidence of their ability and competence to manage modern medicine public sector health facilities. This, however is not borne out by a study of randomly selected PHCs in Chattisgarh [12].

2.3. The state of the private health sector in rural areas

2.3.1. Modern medicine practitioners

Most Allopathic doctors only work in urban areas. Those who do not join hospitals and nursing homes in cities and towns set up small enterprises in urban areas where adequate paying clientele is available. NSSO data reveals that only 18 percent of the self-owned medical enterprises were available in rural areas while the rest 82% were reported to be available only in urban areas. The rural single practitioners largely included enterprises run by unqualified

medical practitioners [13]. Given the growing demand for doctors in urban areas and the remunerative and professional advantages for medical graduates to specialise (through post-graduation), there is little likelihood that modern medicine graduates will move into rural areas even if there is major expansion of medical colleges and seats. Even if rural service becomes mandatory, private practitioners will gravitate only where paying capacity exists among patients.

2.3.2. AYUSH practitioners

AYUSH physicians are often reported as working in rural areas in the private sector. It is not correct as even while in college and thereafter, the students attend Allopathic practitioners' clinics to gain experience of managing patients in urban areas. Because antibiotics, painkillers, anti-emetics, anti-spasmodic, bronchodilators etc. give prompt relief in acute cases, AYUSH students and graduates work as understudies and acquire training in Allopathic practitioners' clinics. Later, they start independent Allopathic practice or join smaller hospitals on cheaper salaries. This was stated by two Directors of Ayurveda in the States of Maharashtra and Chattisgarh when the first author was writing a report for the Ministry of AYUSH; it was independently corroborated by several faculty members and practitioners working in Uttar Pradesh, Himachal Pradesh and the NCT of Delhi.

The private BAMS graduates are in high demand in urban areas where nursing homes and even 100 bedded hospitals employ BAMS doctors to function as a second line workforce-even managing post-operative and Intensive Care Unit (ICU) work [14]. Therefore, the claim that they primarily work in rural areas is belied. BAMS/BUMS/BHMS/BSMS graduates sometimes run single practitioner clinics in the periphery of townships but offering mainly Allopathic treatment. As in the case of Allopathic practitioners clinics run by BAMS practitioners are located at vast distances from most villages and accessed by the rural poor only when consultation with a doctor becomes unavoidable.

3. AYUSH education- answering the dictates of the market

The argument that AYUSH doctors are a massive force and can augment health care delivery is often made but as shown earlier the products of those systems and particularly Ayurveda, are not engaged in rural practice. There are at present over 7.7 lakh registered 'AYUSH doctors practicing in India [Ayurveda-428884 (55.4%), Unani-49566 (6.4%), Siddha-8505 (1.1%), Naturopathy-2242 (0.3%) and Homoeopathy-284471 (36.8%)] [15].

From the seventies the policy approach aimed at bringing AYUSH into a bio-medical framework of education, research and teaching. [See Box-1-AYUSH: A Contextual Explanation]. The CCIM was given statutory responsibility for syllabus and standard setting of AUS colleges. Over the years and increasingly over the last two decades, CCIM has been influenced by college managements, faculty members and students who have been interested only in the future employment prospects of the graduates and not by the need to equip them to provide an AUS approach to health and treatment. There has been a proliferation of Ayurveda colleges which have produced hardly 20% graduates practicing their own systems while 80% of the Ayurveda college graduates end up practicing Allopathy [16] [Box-2 explains the Historical Perspective of AYUSH in India. Box-3 recounts the political support the systems have received].

3.1. Prospects for Ayurveda as a medical system given the proclivity to practice modern medicine

The data available in 2016 annual report of Ministry of AYUSH and the list available on the website of Central Council of Homoeopathy show that at present there are a total of 341

Box-2

Historical Perspective of AYUSH in India – evolution into an officially recognised medical system.

- Prior to independence the *Vaidyas* and *Hakims* were mostly non-institutionally qualified. Only a few provincial Boards recognised specific qualifications.
- After independence AYUSH was converted from a single practitioner based system run by individual *Vaidyas* to a medical system backed by law.
- Once western medicine received official recognition from the colonial rulers, and its acceptance grew, Ayurveda and Unani had perforce to reinvent themselves in order to maintain hegemony and relevance.
- In Kerala, the movement was spearheaded by the founder of Arya Vaidyasala Kottakkal, P S Varier who gave importance to training and maintenance of authenticity and quality.
- The single practitioner home-based pharmacies were re-organised into bulk drug manufacturing enterprises; commercial production started in different parts of the country.
- More than seven Government appointed Committees were established after the Bhore Committee (1946) which presented different approaches to upgrade Indian medicine as a parallel scientific system of medicine.
- It was only in the 1970s that India gave legal recognition to 4 non-Allopathic systems of medicine. The CCIM was established and a special chapter for Ayurveda, Unani and Siddha medicine and Homeopathy was added as Chapter IV A under the Drugs and Cosmetics Act 1940 in 1964.

Box-3

Political Support for AYUSH.

- Politically the AYUSH systems have received continuous support starting with the statutory recognition given to the systems followed by efforts to mainstream AYUSH for public benefit. “Scientificity” was introduced into AYUSH research and education but defined by standards of modern medicine.
- The Central Government established an independent Department for the Indian Systems of Medicine and Homeopathy in 1995.
- The Department of ISM and H renamed as AYUSH in 2003 was upgraded as an independent Ministry in 2014. In 2017, the All India Institute of Ayurveda was inaugurated.
- An announcement for establishing 100 AYUSH hospitals was made in 2017.
- Mainstreaming AYUSH as a part of the National Rural Health Mission – (now NHM) was started in 2005 and is currently under expansion.
- Policies and investments have benefitted teachers, researchers, drug manufacturers, practitioners and mostly urban consumers.

20,000 ASU graduates and 2000 post-graduates pass out from these institutions each year.

The question why AYUSH graduates opt to pursue Allopathic work over the system they have graduated is at the heart of the debate. Across the country, AYUSH colleges provide vastly unequal standards of medical education. Save for a few good Universities and colleges, most graduates are diffident about practicing AYUSH after graduation [18]. The poor infrastructure in AYUSH colleges, non-availability of sufficient number of qualified teachers, heavy emphasis on theory over clinical application, minimal exposure to a cross-section of clinical cases suffering from a range of conditions, besides commercialization and corruption in the AYUSH education sector have contributed to this situation [19]. There are many other factors enumerated below which account for a decline in the practical knowledge, competencies and skills of Ayurvedic practitioners notwithstanding notable exceptions in Kerala and specific regions in some other states.

- (i) The mushroom growth of substandard colleges has diluted the rigour of medical training as adequate quality faculty is not available for teaching. For instance, out of 341 functional colleges for Ayurveda, around 165 colleges (48.38%) were established after the year 2000 [18]. Corruption in the system has even facilitated the establishment of colleges where most of the teachers and patients exist only on paper.
- (ii) The curriculum of the BAMS course is virtually a clone of MBBS program and follows the same pattern of subject classification and content. Undergraduates receive instruction in biomedical subjects from AYUSH faculty members (except where an Allopathic college or hospital is attached which is not the norm). They also receive very little practical exposure or hands-on training because the in-patient admission in AYUSH hospitals is very small.
- (iii) The Ayurveda curriculum largely ignores the limitations of the system (such as in the management of acute life-threatening emergencies and infective conditions). It also gives little or no importance or practical exposure to the prevention and management of lifestyle diseases, chronic non-infective conditions and nutrition-related disorders or management of palliative care to terminally ill patients or those undergoing chemotherapy. With NCDs growing exponentially both in urban and rural settings [3] there is enormous opportunity to reinvent the teaching of Ayurveda and to mainstream its potential but efforts to seek Ayurvedic treatment for chronic disease has largely emerged as an outcome of patients' own interest.
- (iv) Several state governments like Maharashtra, Punjab, Tamil Nadu, Assam, and Himachal Pradesh, among others, have already permitted AYUSH practitioners to prescribe Allopathic drugs so learning to practice Ayurveda has become redundant [20].

It must be said in defense of a few good institutions that exist that the trend described above cannot be over-generalized. A nation-wide survey that included teachers, interns and post-graduate students of Ayurveda revealed substantial differences in imparting clinical skills as well as attitudinal differences to teaching among institutions located in southern, northern, eastern and western regions of India [21]. [See Box-4 which explains how education and practice of Ayurveda is uneven.]

4. The role of unqualified practitioners in rural health care

From the foregoing narrative it is apparent that neither modern medicine doctors nor AYUSH doctors are available to village

Ayurveda, 10 Siddha, 52 Unani, and 196 Homoeopathy colleges. Out of these, 135 Ayurveda, 3 Siddha, 14 Unani and 51 Homoeopathy colleges offer post-graduate courses [17]. On an average, about

Box-4

Absence of commonality between Ayurveda, Unani and Siddha systems.

- The Ayurveda system of medicine is practiced country-wide but there are variations characterised by either University based approaches to teaching or regional applications to providing treatment. The methods of practice engaged in Kerala and Western Maharashtra differ widely from those in Northern Hindi belt states.
- The Unani system is more dominant in the states of Uttar Pradesh, Bihar, the unbroken Andhra Pradesh, Maharashtra, Jammu and Kashmir and Delhi but in terms of practitioners' accounts for 6.4% of the Indian medical systems.
- Siddha medicine is mostly confined to the state of Tamil Nadu and accounts for just 1.1% of the total practitioners.
- Amchi medicine is practiced only by Tibetan medicine practitioners from the Himalayan region.
- A common syllabus and teaching methodology under a national body like CCIM serves little purpose because of distinct regional and state variations and degrees of consumer preference for Ayurvedic treatment.

households be they from the public or private sector to provide treatment for acute illness episodes. Given the geographical spread of villages and their distance from locations where a doctor is available, people have found solutions which are potentially dangerous. The vacuum has been filled by three kinds of people:

- (i) Unqualified Medical Practitioners (UMPs) who do not possess any recognized medical qualification. These constitute the largest segment of providers [22].
- (ii) Chemists – many of whom have no pharma qualification and are proxies of a person in whose name the pharmacy (*Dawai shop*) is run [22].
- (iii) Traditional medicine practitioners -non- institutionally qualified healers, bone-setters, snake venom removers, local traditional herbalists and faith healers [11].

In India the dimension of informal providers providing Allopathic treatment as “doctors” (referred by WHO as UMPs) is massive. These unqualified practitioners are also referred to as RMPs which refers to Rural (not Registered) Medical Practitioners or sometimes as informal village health providers. Their presence is country-wide. They are the only ones providing the first line of health care in tens of thousands of villages. The Health Workforce Analysis report published by WHO Geneva (2016) revealed that the prevalence of UMPs in India outnumbers that of regular doctors [23]. The study showed that only 58% of the doctors in urban areas had a medical degree and only 19% of those in rural areas possessed a medical qualification; among Allopathic doctors, as many as 31.4% were educated only up to secondary school level; and as many as 57.3% did not have a medical qualification. These findings only corroborate several earlier findings in international and national research papers which had studied the situation. The UMPs work in close co-ordination with qualified doctors who first train them as cheap assistants and later when they set up independent practice the same practitioners refer patients to them and receive a commission, up to 30%, for doing this [24].

UMP practice is ubiquitous and no state has successfully tackled this problem. A case of an UMP who has recently infected

more than 50 people with HIV/AIDS which was widely reported in the national and international media is as an example of the lurking dangers of overlooking the situation [25]. The spread of multi-drug resistance is another consequence of irrational drug use. The need to address the situation is of critical importance [26]. The diagnosis and treatment of tuberculosis is a case in point. Only timely and correct diagnosis can halt the TB transmission but broad spectrum anti-biotics are used by unqualified medical practitioners for treatment and also sold over-the-counter routinely which results in incomplete treatment and temporary suppression of symptoms [27].

A 360° picture of the services that UMPs provide to poor patients is available in a recently published report [22] “Unqualified Medical Practitioners - the legal, medical and social determinants of their practice.” The report addresses the current dependence of poor people on such practitioners and analyses why it will not be feasible to either regularise or to eliminate them in the foreseeable future. However irrational medication, use of steroids, antibiotics, parentally administered fluids and injections-even the presumptive use of TB drugs without diagnosis all carry huge implications for the spread of HIV/AIDS, blood related infection and multi-drug resistance.

The PSC which examined the NMC Bill 2017 has recommended strong punitive action (one year imprisonment and Rs 5 lakh fine) for unqualified medical practice. This has been supported by the recent Cabinet decisions notified by the Press Information Bureau and is likely to become law [4,5]. But since the UMPs have been the first port of call for the rural poor and alternatives that address the gaps in access and affordability of medical treatment need to be filled by a trained workforce, which today does not exist, it is important to discuss possibilities.

5. The role of medically trained auxiliaries

When it is abundantly evident that neither MBBS nor BAMS etc. doctors can ever be available to provide services at the village level unqualified practitioners will remain the default choice for poor households. There is need to establish a tier of licensed practitioners *who are not doctors* but have been educated and trained in a medical college to provide the first line of medical treatment. But they must have accountability to the health system and be capable of being placed under supervision to follow prescribed investigation practices, drug regimen and provide referrals. For that they need to be enrolled on the medical register *in a separate schedule*. This would make them liable to cancellation of the license to practice in case there is violation. While not suggesting the revival of the old LMP system a reference to the pre-Independence period carries relevance.

5.1. History of licentiates

West Bengal was a state in which during the 19th century, medical colleges produced two grades of doctors to respond to the spiraling demands for health care. The first was the full-fledged doctor who had had more than five years of education and training while the second were professionals trained for 3–4 years who could handle acute and uncomplicated diseases. They were called licentiate medical practitioners (LMPs) and in the early 1940s they outnumbered doctors [22]. Similar practitioners existed in other regions of the country as well, for instance, Madras province [28].

The Vernacular Licentiate in Medicine and Surgery was introduced as a diploma to produce native doctors in Medical College, Calcutta in 1851. These licentiates were expected to treat the sick

poor in the country side either through charitable dispensaries or as private practitioners.

The Joseph Bhole Committee abolished the licentiate diplomas in favour of a bachelor degree supported by five and half years of medical education based on the British system. The Committee did not visualise how much India's population would grow and how few doctors would be available to work as general duty workers without specialisation. Such general physicians hardly exist anymore as the costs of medical education are very high and anyone completing the medical education course invariably opts for specialisation to get a return on the investment on medical education.

In this context, it may be noted that the PSC has recommended widening the scope of the NMC Bill's objectives by amplifying the Preamble as under:

"to provide for a medical education system that improves access to quality and affordable medical education, ensures availability of adequate and high quality medical professionals in all parts of the country; that promotes equitable and universal healthcare that encourages Community Health Perspective and makes services of Medical Professionals accessible to all the citizens; that promote national health goals; that encourages medical professionals to adopt latest medical research in their work and to contribute to research; that has an objective periodic and transparent assessment of medical institutions and facilitates maintenance of a medical register for India and enforces high ethical standards in all aspects of medical services; that is flexible to adapt to changing needs and has an effective grievance redressal mechanism and for matters connected therewith or incidental thereto." [4]

Bringing a community perspective which addresses the needs of the bulk of the population living in villages, India needs licentiates/medically trained auxiliaries (which could include even nurses and paramedics) to give appropriate treatment for acute illnesses. After being trained in medical colleges or in district hospitals and passing an examination such auxiliaries should be enrolled in a separate Schedule under the State Medical Council Acts. This was the case before the Bhole Committee (1945) annulled the provision contained in the Schedule to the IMC Act.

Such medical auxiliaries can be accredited to the proposed Wellness Centres announced in the 2018 budget or even with designated public health facilities; village households can register with them as family health providers; having the choice to re-enroll with another medical auxiliary if so inclined. Medical auxiliaries enrolled on the medical register can be linked through GIS mapping and Global Positioning System to undertake specific responsibilities under the supervision of a link doctor responsible for oversight and mentoring. It would be better if such auxiliaries are compensated through an insurance model leaving selection of provider to the user. Health administrations can use the Aadhaar database to determine beneficiary entitlement.

The district health administration can proactively encourage people to only visit those intermediary health providers who are enrolled on the medical register and provide the phone numbers of those auxiliaries that volunteer for accreditation with the PHCs and Wellness centres.

6. AYUSH at a crossroads

The PSC dropped the idea of a bridge course for AYUSH practitioners to legitimately practice Allopathy. The removal of the bridge course has been accepted by the Cabinet and is now unlikely to be revived at the Central level. However, the question of letting AYUSH doctors continue to treat using Allopathic drugs has been left to be

decided by the states. *De facto* the states have been allowing BAMS doctors and even homeopaths to use Allopathic medicine using Rule 2 (ee) (iii) of the Drugs and Cosmetics Rules, 1945 of the Drugs and Cosmetics 1940. States like Maharashtra, Tamil Nadu, Gujarat, Punjab, Uttar Pradesh, Bihar, Assam, and Uttarakhand have allowed this through issue of Government orders [20].

Authorization to thus practice using modern medicine has however been questioned and set aside by the Delhi High Court in the case of Delhi Medical Association Versus Principal Secretary (Health) in Government of NCT of Delhi in 2016. The order has been contested by the Government of Delhi in the Supreme Court and the apex court has issued notices to the Respondent the Delhi Medical Association regarding the request for condonation of delay in filing the Appeal. Indeed the outcome of this matter before the Supreme Court will decide whether the interpretation of the Drugs and Cosmetics Act by the Government of NCT of Delhi is within the ambit of the law. The decision will affect other states too.

The current formulation given by the PSC and approved by the Cabinet favours leaving the question of utilization of AYUSH practitioners to the states. Presently the AUS curricula and syllabi are not made by the states but by the CCIM. If the strategy is taken forward as recommended by the PSC and the Cabinet, and is enacted as law, the CCIM or its future replacement would need to address questions of building proficiency through adequate clinical exposure of future graduates. In case CCIM is eventually replaced by the National Commission for Indian Systems of Medicine (NCISM) various possibilities like the establishment of regional Boards who are given autonomy to prescribe a need - based syllabus might develop. This would be a more practical way of dealing with the syllabus as there are vast inter-regional differences in the way Ayurveda is taught, practiced and accessed by the public.

7. Emerging questions

1. Should Allopathy practice by AYUSH graduates continue as has been going on or should the syllabus and training be further Allopathised to facilitate their utilisation in the Government and private sector?
2. Or, should the curriculum and training of Ayurveda etc. be changed to preserve the time-honoured system and contemporize their approaches to meet a growing demand for lifestyle disease management and the treatment of chronic conditions using the indigenous systems? If the latter is the preferred route, then what would be needed to accomplish that objective in a sustained manner?
3. How can one create adequate trained and accountable health manpower outside the Government system but capable of giving the first line of medical treatment nearer the villages?

8. Suggested measures

By opening the possibility for AYUSH practitioners to treat patients using specified modern medicine drugs through state level statutes, it will only bring the *de facto* position into the open and regularize what is already happening. However, the benefit to people living below the Block or taluka level and in the villages will be negligible. Without doubt it will destroy whatever has been done to develop and propagate traditional medicine for which a separate Department and later a Ministry of AYUSH was established in 2014.

When the world is looking to India and in particular Ayurveda and many patients suffering from chronic diseases are visiting centres run in Kerala and some other places in India for treatment for chronic conditions, unthinkingly opening wide the doors to

Box-5

The strength of AYUSH as presented by the Traditional Knowledge Digital Library.

- Both Ayurveda and Unani Medicine have a large repertoire of formulations which have been listed methodically in the Traditional Knowledge Digital Library (TKDL) which was prepared in patent compatible form to ward off claims for grant of patents with the claim of being a discovery when it is an integral part of recognised AUS books and treatises.
- Over 300,000 formulations of the AU systems are available in patent compatible format in 6 UN languages.
- To date over 200 patents have been foiled which shows the strength and relevance of the systems.
- TKDL was the direct outcome of Central Government commitment and support.

practice Allopathy can derail and eventually finish Ayurveda. Box-5 explains the strengths of AYUSH with reference to Traditional Knowledge Digital Library (TKDL).

The following steps need consideration and debate:

- Many states have already permitted Allopathic practice in the name of filling the paucity of doctors in rural areas. This article has exposed the fact that AYUSH doctors do not and will not work in tehsils and villages and the argument that this will equip them to provide healthcare in absence of modern medicine doctors is just a subterfuge to conceal the real aim which is to regularize modern medical practice (in the name of the rural poor).
- Presently all candidates appear for a common entrance examination and those who do not qualify for MBBS opt for AYUSH as a second choice [29]. Therefore, a separate examination needs to be organized for entry to Ayurveda etc., courses to attract motivated students. If the future manner in which such graduates would be inducted into health care delivery is defined through policy it will help revive an interest among motivated aspirants. But unless Government recognises the relevance of the AYUSH systems with reference to their applicability to specific aspects of contemporary health conditions, good students will not readily opt for such courses. Government scholarships should be considered to promote these systems by substantially supporting motivated students to pursue Ayurveda education, with a linkage to employment within the public system for 5 years after qualifying an examination. This will have to be a state level strategy but can be supported by AYUSH or the Ministry of Science and Technology.
- Future AYUSH courses (BAMS, BUMS and BSMS) must impart skills and clinical competencies which are effective in preventing and assisting in the management of non-communicable disease (NCDs) which are growing sharply [3]. The competencies and skills expected from these graduates and the specific therapeutic interventions must be specified in the curricula so that the students taking admissions in these courses are well informed of what they would need to master during the course.
- A provision for enrolment of MBBS graduates desirous of studying AYUSH systems is needed in the NCISM Bill which is on the anvil. This would increase interaction among different streams and foster joint research in AYUSH systems which would greatly benefit the public [30,31].

- The needs of the bulk of the rural population must be recognized. A pool of medically trained auxiliaries/licentiates (who can take fee for service) need to be trained and accredited as auxiliaries after being enrolled in a separate schedule under the medical register. This is necessary to make them accountable. They should be linked by mobile phone to the proposed wellness centres and to PHCs. Apart from providing medical treatment for acute conditions they should be trained to refer patients to the wellness centres/PHCs or to appropriate hospitals using mobile telephony.
- The role of upgraded district hospitals serving as training centres for Allopathic and non-Allopathic physicians, nurses and allied health professionals must be seriously considered. A proportion of seats in each category could be state-sponsored for candidates from that district/cluster of districts, with local employment assured and mandated for 5 years after graduation. Local enrolment is more likely to lead to local retention.
- The NMC Bill or a subsequent law needs to incorporate an enabling provision for establishing a statutorily mandated study every five years to establish the needs of different population cohorts. Institutes such as NIHF, PHFI and AIIPH and H although they have worked on public health policy, have not undertaken studies on medical education curriculum as related to health workforce planning. Establishing an 'Institute for Medical and AYUSH Education Policy Research' would be a good way of appraising long term health workforce needs on which basis the medical curriculum should ideally be framed [32–34].

9. Conclusion

Medical education policy is intrinsically linked to the demographic and disease prevalence and its transition in a country. That calls for a continuous process of forecasting the needs for medical manpower to cater to the needs of all economic sections of the public as well as age cohorts. People living in rural areas constitute the bulk of the country's population but their access to health care is of very poor quality. Insurance (whether the National Health Protection Scheme or other state run schemes) only covers hospital based catastrophic illness. It will take time to establish the proposed wellness centres and equip them with diagnostic capacity. It must be recognized that the majority of health challenges are acute and need immediate medication in close proximity to where communities live. Strategies like enabling AYUSH practitioners to fill the gaps in medical manpower will remain well-intentioned but will not help village communities as this paper has demonstrated. This sort of camouflage could even derail the goodness of Ayurveda and retard its future development as a system of medicine.

The alternatives suggested in this paper would require a new model of service delivery and await debate and discussion.

Sources of funding

None.

Conflict of interest

None.

Acknowledgement

The authors benefitted from a wide range of people who had deep knowledge and experience of the primary health system in India, its interface with Indian medicine and the functioning of the health

workforce operating at that level. Particular thanks are due to those who read the draft and made very useful suggestions within their areas of expertise. These included:

Dr. K. Srinath Reddy, President, Public Health Foundation of India, Dr. Devi Prasad Shetty, Chairman and Founder, Narayana Health, Prof. RH Singh, Distinguished Professor, Faculty of Ayurveda, Banaras Hindu University, Prof. Ritu Priya, Centre of Social Medicine and Community Health, School of Social Sciences, Jawaharlal Nehru University, Dr. Unnikrishnan Payyappallimana, specialising in Ayurveda and anthropology, Dr. Shailender K. Hooda, Institute for Studies in Industrial Development (an affiliated institution of ICSSR.)

Discussions with Dr. Sujatha Venkatesh of JNU and Dr. Leena Abraham from TISS were also useful in understanding the practice of Ayurveda in Kerala.

References

- [1] Census of India 2011. Rural Urban Distribution of Population. Data Available at: http://censusindia.gov.in/2011-prov-results/paper2/data_files/india/Rural_Urban_2011.pdf. [Date last accessed: 28th February, 2018].
- [2] Press Information Bureau. Government of India, Ministry of Finance. Provisional Data of Socio Economic and Caste Census (SECC) 2011 for Rural India Released. 03-July-2015. Available at: <http://pib.nic.in/newsite/PrintRelease.aspx?relid=122963> [Date last accessed: 3rd April, 2018].
- [3] Indian Council of Medical Research. Public health foundation of India, Institute for health metrics and evaluation. India: health of the Nation's states. The India state-level disease burden initiative. New Delhi, India: ICMR, PHFI and IHME; 2017.
- [4] Parliament of India, Rajya Sabha. Department-Related Parliamentary Standing Committee on Health And Family Welfare. One Hundred Ninth Report on The National Medical Commission Bill. 2017 (Presented to the Rajya Sabha on 20th March, 2018) (Laid on the Table of Lok Sabha on 20th March, 2018). Available at: <http://164.100.47.5/newcommittee/reports/EnglishCommittees/Committee%20on%20Health%20and%20Family%20Welfare/109.pdf> [Date last accessed: 1st April, 2018].
- [5] Press Information Bureau. Government of India. Cabinet approves certain official amendments to the National Medical Commission (NMC) Bill March 28th, 2018. Available at: <http://pib.nic.in/newsite/PrintRelease.aspx?relid=178174> [Date last accessed: 5th May, 2018].
- [6] Accountability Initiative. Budget briefs volume 10 issue 6. Centre for Policy Research; February 2018. p. 1.
- [7] Panagariya A. India: The crisis in rural health care. Op-ed article. Brookings. January 24, 2008. Available at: <https://www.brookings.edu/opinions/india-the-crisis-in-rural-health-care/> [Date last accessed: 2nd March, 2018].
- [8] District level Health Facility GIS Maps. National Population Stabilisation Fund (JanasankhyaSthirataKosh), Ministry of Health and Family Welfare, Government of India. Available at: <http://www.jsk.gov.in/content/innerpage/district-level-health-facility-gis-maps.php> [Date last accessed: 6th March 2018].
- [9] Rao KD, Shahrawat R, Bhatnagar A. Composition and distribution of the health workforce in India: estimates based on data from the National Sample Survey. WHO South-East Asia J Publ Health 2016;5(2):133–40.
- [10] Chandra S. Status of Indian medicine and folk healing. Part-1. Chapter-4. Practice. Available at: <https://over2shailaja.wordpress.com/2013/04/12/status-of-indian-medicine-and-folk-healing-part-ii/>. [Date last accessed: 26th April, 2018].
- [11] Priya R, Shweta AS. Status and role of Ayush and local health traditions under the national rural health mission. New Delhi: National Health Systems Resource Centre, National Rural Health Mission. Ministry of Health & Family Welfare. Government of India; 2010. Available at: https://iiias.asia/sites/default/files/IIAS_NL65_2425.pdf [Date last accessed: 3rd April, 2018].
- [12] Rao KD, Sundararaman T, Bhatnagar A, Gupta G, Kokho P, Jain K. Which doctor for primary health care? quality of care and non-physician clinicians in India. Soc Sci Med 2013;84:30–4. <https://doi.org/10.1016/j.socscimed.2013.02.018>.
- [13] Hooda SK. Private sector in healthcare delivery market in India: structure, growth and implications. Working Paper 185. New Delhi: Institute for Studies in Industrial Development; December 2015. Available at: <http://isid.org.in/pdf/WP185.pdf> [Date last accessed: 28th February, 2018].
- [14] Herat P. Present day private ICU/CCU in the city of Mumbai and the patients right to healthcare (dissertation). Department of Civics & Politics, University of Mumbai. In: Nandraj S, Muralaeddharan VR, Baru RV, Quadeer I, Priya R, editors. Private health sector in India. Review and annotated bibliography. Centre for enquiry into health and allied themes. Mumbai. Foundation for sustainable development. (Madras). Mumbai: CEHAT: Indian Institute of Technology; February 2001 [ISBN 81-89042-08-4].
- [15] Data from AYUSH Ministry. Available at: <http://ayush.gov.in/sites/default/files/Medical%20Manpower%20Tables.pdf>; 2017 [Date last accessed: 8th March, 2018].
- [16] Wujastyk D, Smith FM. In: Wujastyk Dagmar, Smith Frederick M, editors. Modern and Global Ayurveda: Pluralism and paradigms. Albany, NY: State University of New York Press; 2008. p. 363. ISBN 978 0 7914 7489 1.
- [17] Annual Report. Ministry of AYUSH. 2016. Available at: <http://ayush.gov.in/sites/default/files/ANNUAL%20REPORT%202016-17%20ENGLISH.pdf> [Date last accessed: 8th March, 2018].
- [18] Patwardhan K, Gehlot S, Singh G, Rathore HCS. The Ayurveda education in India: how well are the graduates exposed to basic clinical skills? Evid base Compl Alternative Med: eCAM 2011;2011:197391. <https://doi.org/10.1093/ecam/nep113>.
- [19] Patwardhan K, Gehlot S, Singh G, Rathore HCS. Global challenges of graduate level Ayurvedic education: a survey. Int J Ayurveda Res 2010;1(1):49–54. <https://doi.org/10.4103/0974-7788.59945>.
- [20] Chandra S. Report on the status of Indian medicine and folk healing—with a focus on the benefits that the systems have given the public. Ayu 2011;32(3):299–303.
- [21] Patwardhan K, Gehlot S, Rathore HCS. The quality of Ayurveda education in India: a survey. USA: Publisher: Lulu.com; 2014. ISBN: 9781304487643. (119 Pages).
- [22] Chandra S. Unqualified medical practitioners – the legal, medical and social determinants of their practice. Shiv nadar university. Available at: <http://snu.edu.in/pdf/UMP-BOOK.pdf>. [Date last accessed: 28th February, 2018].
- [23] Anand S, Fan V. The Health workforce in India, Human resources for Health observer series No. 16. Geneva: WHO; 2016.
- [24] Narayana KV. The unqualified medical practitioners. Methods of practice and nexus with the qualified doctors. Working paper No. 70. Begumpur, Hyderabad: CESS; May, 2006. p. 34. Available at: http://www.eaber.org/system/tdf/documents/CESS_Narayana_2006.pdf?file=1&type=node&id=22330&force=1 [Date last accessed: 28th February, 2018].
- [25] Naqvi H. News Report. Unnao quack accused of infecting 58 people with HIV by using same syringe arrested. Hindustan Times. 7 February, 2018. Available at: <https://www.hindustantimes.com/india-news/unnao-quack-accused-of-infecting-58-with-hiv-by-using-single-syringe-arrested/story-UA5D7m3Amihmax1Ll6b4iP.html> [Date last accessed: 28th February, 2018].
- [26] Barker AK, Brown K, Ahsan M, Sengupta S, Safdar N. What drives inappropriate antibiotic dispensing? A mixed-methods study of pharmacy employee perspectives in Haryana, India. BMJ Open 2017;7(3):e013190. <https://doi.org/10.1136/bmjopen-2016-013190>.
- [27] Mehra C, editor. Tuberculosis India's ticking time bomb: the TB survivors' manifesto. Speaking Tiger (Publisher); 2018.
- [28] Muralaeddharan VR. Professionalising medical practice in colonial South-India. Econ Polit Wkly Jan. 25, 1992;27(4):27–30, 35–37. Available at: <http://www.jstor.org/stable/4397525> [Date last accessed: 11th March, 2018].
- [29] Sujatha V. What could “integrative” medicine mean? Social science perspectives on contemporary ayurveda. J Ayurveda Integr Med 2011;2(3):115–23. <https://doi.org/10.4103/0975-9476.85549>.
- [30] The World Economic Forum and the Harvard School of Public Health. Economics of non-communicable diseases in India. 2014. Available at: http://www3.weforum.org/docs/WEF_EconomicNonCommunicableDiseasesIndia_Report_2014.pdf [Date last accessed: 11th March 2018].
- [31] Roy V. Time to sensitize medical graduates to the indian systems of medicine and Homeopathy. Indian J Pharmacol 2015;47:1–3.
- [32] Patwardhan K. Medical education in India: time to encourage cross-talk between different streams. J Ayurveda Integr Med 2013;4(1):52–5. <https://doi.org/10.4103/0975-9476.109556>.
- [33] Patwardhan K, Patwardhan B. Ayurveda education reforms in India. J Ayurveda Integr Med 2017;8(2):59–61. <https://doi.org/10.1016/j.jaim.2017.05.001>. Epub 2017 Jun 7.
- [34] Bhaumik S. Health and beyond... strategies for a better India: incorporating evidence to strengthen health policy. J Fam Med Prim Care 2014;3(4):313–7. <https://doi.org/10.4103/2249-4863.148098>.