



Mathpati, Mahesh Madhav; Albert, Sandra; Porter, John DH (2018) Ayurveda and medicalisation today: The loss of important knowledge and practice in health? *Journal of Ayurveda and Integrative Medicine*. ISSN 0975-9476 DOI: <https://doi.org/10.1016/j.jaim.2018.06.004>

Downloaded from: <http://researchonline.lshtm.ac.uk/4651010/>

DOI: [10.1016/j.jaim.2018.06.004](https://doi.org/10.1016/j.jaim.2018.06.004)

#### Usage Guidelines

Please refer to usage guidelines at <http://researchonline.lshtm.ac.uk/policies.html> or alternatively contact [researchonline@lshtm.ac.uk](mailto:researchonline@lshtm.ac.uk).

Available under license: <http://creativecommons.org/licenses/by-nc-nd/2.5/>



Contents lists available at ScienceDirect

## Journal of Ayurveda and Integrative Medicine

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

## Review Article

## Ayurveda and medicalisation today: The loss of important knowledge and practice in health?

Mahesh Madhav Mathpati <sup>a,\*</sup>, Sandra Albert <sup>b</sup>, John D.H. Porter <sup>c</sup><sup>a</sup> Institute of Trans-disciplinary Health Sciences and Technology (TDU), Bangalore, India<sup>b</sup> Public Health Foundation of India, India<sup>c</sup> London School of Hygiene and Tropical Medicine, London, UK

## ARTICLE INFO

## Article history:

Received 5 March 2018

Received in revised form

4 June 2018

Accepted 6 June 2018

Available online xxx

## Keywords:

Ayurveda  
Medicalization  
Knowledge  
Education  
Practice  
Policy

## ABSTRACT

Ayurveda translates as 'life science'. Its knowledge is not limited to medicine, cure or therapy and is for laypersons, households, communities, as well as for physicians. Throughout its evolutionary history, Ayurveda and Local Health Traditions have reciprocally influenced each other. In modern times, the influence of biomedicine on Ayurveda is leading to its medicalisation. Over the past century, the introduction and perspective of biomedicine into India has made the human being an object for positive knowledge, a being who can be understood with scientific reason and can be governed and controlled through medical knowledge. This paper explores how this shift towards medicalisation is affecting the knowledge, teaching, and practice of Ayurveda. It examines the impact and contribution of processes like standardisation, professionalisation, bio-medicalisation and pharmaceuticalisation on Ayurveda education, knowledge, practice and policies. To maintain health and wellbeing Ayurveda's ancient knowledge and practice needs to be applied at individual, community and health care provider levels and not be limited to the medical system. The current over medicalisation of society is a potential threat to human health and well-being. Ayurveda and LHT knowledge can provide essential teachings and practices to counter-balance this current trend through encouraging a population's self-reliance in its health.

© 2018 Transdisciplinary University, Bangalore and World Ayurveda Foundation. Publishing Services by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

## 1. Introduction

India is diverse and pluralistic in its food, medicine and health traditions. Among all the traditional knowledge systems, the science of Ayurveda provides insights for longevity and a healthy life. The term Ayurveda is comprised of two words *ayu* (life) and *veda* (knowledge), and deals with health and wellbeing [1,2]. It is defined as the discipline that deals with the salutary and unsalutary aspects of life, the happy, and unhappy life, and what is beneficial and not beneficial for nurturing life and a full life span. Thus, it translates as 'life science' [1,2]. The term Ayurveda is not limited to medicine, cure or therapy, rather it implies *an approach to life and living*, and is guided by the *praneshana* (desire of living beings to live a long healthy life), *dhaneshana* (desire to enjoy monetary and material security), and *paralokeshana* (desire to secure happiness in the life hereafter) [3].

In many regions of India, the ecosystem is nurtured by community specific local health traditions (LHT) that have been influenced by and have influenced the practice of Ayurveda. This knowledge is largely for laypersons, households, communities and at the specialised level for physicians. However, in recent years, there has been an increased attention and interest in how the process of medicalisation of health systems everywhere is influencing the ancient expression of Ayurveda wisdom more generally. This paper addresses the medicalisation that is occurring within the profession.

## 2. Medicalisation

In contrast to Ayurveda's approaches to life and health, in most developed countries Western/Biomedicine has played a constitutive part in "making up people" [4]; that is, 'in deciding the building blocks for who a person is and who people are'. Medical knowledge, medical experts, and medical practices have played varied roles in this process [4]. In the last century, with the introduction and perspective of biomedicine, a human being has become an object

\* Corresponding author.

E-mail address: [dr.mathpati@gmail.com](mailto:dr.mathpati@gmail.com) (M.M. Mathpati).

Peer review under responsibility of Transdisciplinary University, Bangalore.

<https://doi.org/10.1016/j.jaim.2018.06.004>0975-9476/© 2018 Transdisciplinary University, Bangalore and World Ayurveda Foundation. Publishing Services by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

for positive knowledge, a being who can be understood with scientific reason. Medicine has also become a new way of governing and controlling people through experts in the field with political and economic authority trying to create and to manage ways of living that both minimise disease and promote health [5].

### 2.1. The medicalisation of life in the 21st century

Medicalisation is understood as, “the process of defining a problem in medical terms, using medical language to describe a problem, adopting a medical framework to understand a problem, or using a medical intervention to ‘treat’ it. This is a sociocultural process that may or may not involve the medical profession, lead to medical social control or medical treatment, or be the result of intentional expansion by the medical profession” [6]. It is a social process in which a previously non-medical issue begins to be described, accepted or treated as a medical problem. Healthcare providers today understand health to be the “absence of disease”. Scholars have argued that the current World Health Organisation’s (WHO) definition of health is unsatisfactory. In particular scholars have tried to show the synergy between *Sushruta’s* and WHO’s definition of health but Ayurveda’s core understanding is different. Health in Ayurveda is understood as a positive state and it is based on the outcomes of adaptive feedback that each person establishes with the environment. It is not merely a biological process [7,8]. The concern with the WHO’s definition is the absoluteness of the word ‘complete’ which would leave most of us unhealthy most of the time. The other problem is that the definition becomes counter-productive as it declares people with chronic disease and disabilities as definitively ill and supports medical technology and drugs. Scholars have redefined health as, “the ability to adapt and self-manage in the face of social, physical, and emotional challenges” [9]. Their observations suggest that WHO’s definition has unintentionally contributed to medicalisation of society. This minimises the role of the human being’s capacity to cope autonomously with life’s ever changing physical, emotional, and social challenges and to function with fulfilment and a feeling of wellbeing even when suffering from a chronic disease or disability [10].

The current form of medicalisation can be seen and witnessed with many examples, ranging from reproductive technologies, to

treatment for age-related issues and to the use of psychopharmaceuticals [4]. An everyday example is food advertising, which dominates our lives with claims of different products’ nutritional contents (eg. fats, fibres ...) and claims of their health effects (eg. strengthening the bones, reducing the risk of heart disease and so on). This process and perspective has increasingly represented food as ‘a medicine’ leading to the medicalisation of food through advertising [11].

This shift towards medicalisation is increasingly seen to be influencing traditional life sciences like Ayurveda. To illustrate this, some key features of medicalisation, with definitions and terminologies denoting this phenomenon, are described. Table 1 describes the synonyms, terminologies and factors used to denote various forms of medicalisation.

Medicalisation is multileveled in nature. These levels are: (a) Conceptual – medical definitions are created and employed, (b) Institutional – disease conceptualisations are codified and used to manage, create or promote illness and (c) Interactional – typically conceptualised as occurring between patients and physician. There are various other frameworks that are used to understand and highlight the process of medicalisation, for example, biomedicinalisation, healthicisation, and pharmaceuticalisation, which explore different pathways and limitations of the medicalisation process. Biotechnology (pharmaceuticals and genetics), consumerism and managed care are regarded as some of the primary instruments or factors in this process [16]. Tables 2 and 3 describe the various details of the levels and dimensions of the phenomenon.

### 3. The impact of various forms of medicalisation on Ayurveda

The impact of medicalisation on Ayurveda can be understood and explained using the above-mentioned terminologies and frameworks. These frameworks help us to understand and to explore how medicalisation has influenced developments in the knowledge, education, practice and policies of Ayurveda in India today.

#### 3.1. Medicalisation of knowledge and education

At the conceptual level, Ayurveda is the ‘knowledge of life’ and is a ‘life science’ [1,2] but its knowledge goes beyond human health

**Table 1**  
Synonyms, terminologies and factors of medicalisation [12–15].

Various terms used for medicalisation	<ul style="list-style-type: none"> <li>• Over diagnosis – excessive or undue application of medicine.</li> <li>• Disease mongering – convincing healthy people that they are sick and in need of medicines.</li> </ul>
Terminologies which are associated with medicalisation	<ul style="list-style-type: none"> <li>• Problematization</li> <li>• Bio-medicalisation</li> <li>• Healthicisation</li> <li>• Pharmaceuticalisation</li> <li>• Biosocialisation</li> <li>• Biotechnology (pharmaceuticals and genetics),</li> <li>• Consumerism (patients challenging medical authority) and</li> <li>• Managed care (medical encounter cost-controls)</li> <li>• Primary prevention</li> <li>• Immunisation</li> <li>• Lowering of treatment thresholds</li> <li>• Lifestyle medication</li> </ul>
Factors leading to medicalisation	<ul style="list-style-type: none"> <li>• Medical imperialism</li> <li>• Inter and intra-professional rivalry</li> <li>• Capitalism</li> <li>• Patriarchy</li> <li>• Technocracy</li> <li>• Secularisation</li> <li>• Social control</li> <li>• Lifestyle drugs</li> <li>• Patients to medical consumers</li> <li>• Bio-medical Practices</li> <li>• Identities (and actors): medicalisation increases when (individual or collective) biomedical actors and identities become more prevalent, powerful or salient in addressing social problems</li> </ul>

**Table 2**  
Levels of medicalisation [6].

Macro	Meso	Micro
Legislation, rulings, reports, and debates of national and international organizations such as government bureaucracies, courts, legislatures, corporations, markets, universities, journals, foundations, non-profit organizations, and the media	Mission statements, reports, advertising, and procedures of local and regional organizations such as workplaces, hospitals, medical groups, clinics, nursing homes, schools, social service agencies, and prisons	Face-to-face interaction and physical contact between providers (medical and non-medical) and clients Client self-management

**Table 3**  
Dimensions of medicalisation [6].

Discourses	Biomedical vocabularies, models, and definitions – symptom, syndrome, disease, illness, contagion, etc.
Practices	Biomedical practices and technologies – testing, measurement, normalization, surveillance, risk assessment, insurance coverage, examination, lab testing, imaging, hygiene, surgery, pharmaceuticals, medical devices, etc.
Identities (and actors)	Individual and collective biomedical actors – physicians, biomedical researchers, hospitals, insurance companies, medical groups, drug and device makers, medical schools, professional associations, etc.

and Ayurveda is considered multidisciplinary in nature. The traditional literature and practice considers the health and wellbeing of plants and animals as well as the surrounding environment. The various branches of the tradition, like *Vrukshayurveda* (Ayurveda for health of the plants), *Pashuayurveda* (Ayurveda for farm animals' health), *Hasti ayurveda* (Ayurveda for elephant health), are not mentioned in current Ayurveda study, practice and policies [17]. It could be argued that these various branches of Ayurveda frame the world in a particular way and use medical interventions when needed. It is not true to characterise Ayurveda just as a science dealing with the human body and its life [3]. In recent years, Ayurveda practice has lost its holistic perspective, which emphasises that the human being and nature have fundamental commonalities and are interdependent. Current Ayurveda education has become medicalised to the extent that, it now only looks at humans and is only taught in medical schools where its practice and focus have become limited to clinical/hospital care by qualified Ayurveda practitioners.

Historically, the teaching of Ayurveda was mainly offered through a *Gurukula* system (a type of residential schooling system in ancient India with *shishya* (students) living near or with the *guru* (teacher) which encouraged a curiosity to understand, to practice and to conduct research) [18]. The holistic rationale of Ayurveda, with its bedside explanations and the use of the five *Pramanas* (tools of knowledge) to diagnose and treat disease are examples of its pedagogical approach (Table 4). The influence of biomedical research today however, has encouraged a greater emphasis on *Sastra*, the science of understanding, which has contributed to an unbalanced approach leading to the bio-medicalisation of Ayurveda, which is now no longer holistic.

Today, Ayurveda teaching is established under the affiliation of recognised universities only. The biomedical approaches of

unification and standardisation nationally is also being applied to Ayurveda education and the role of the Central Council for Indian Medicine (CCIM) has been influential in this process. However, the current curriculum is designed in a way, which mimics the bio-medical course with a view to achieving equal status. It has even translated topics of study from English to Sanskrit to create subjects that did not exist in Ayurveda (eg. anatomy is translated as *śārīracanā* and physiology as *śārīrakriyā*). However, “Ayurvedic *śārīra* takes a systems approach to understanding the human being as an integration of body, mind and self. It covers disciplines like metaphysics, genetics, embryology, obstetrics, and study of vital points, anatomy, pathology and forensic medicine”. The critical elements of *tattva* (Principles), *sastra* (Science) and *vyavahā* (Practice) in studying Ayurveda, seem to be missing in the current education policy [19]. There is no attempt to disseminate the knowledge of Ayurveda to the public at large. Rather Ayurveda is presently only taught professionally to create medically trained physicians [20].

### 3.1.1. Standardisation

In recent years, even with the increasing growth and popularity of the subject, diversity in the knowledge and practice of Ayurveda is being reduced as it becomes increasingly ‘standardised’. This is the result of the creation of a uniform study curriculum across the country and through the influence of the rational philosophical approach of allopathic medicine.

Ayurveda philosophy is constructed on the principle of local adaptation, and health care approaches are diverse, region specific and adapted to local conditions [19]. This is evident from the numerous textbooks in local languages like the *Chikitsa manjiri* and *Sahasrayougam* in Malayalam, the *Chikitsa Pradeep* in Marathi, and the *Sarvaushadha guna kalapam*, *Ayurvedasara* or *Virabhattyā*, and *Basavarajeyam* in Telugu [21–23]. With the standardisation of education across the country, these local texts have lost their importance in Ayurveda education and practice.

### 3.2. Medicalisation of practice and policies

Ayurveda explains that the role of the physician is to ‘give a helping hand in the processes of healing’. Ayurvedic philosophy believes that health-care practices are not only directed towards curing a disease but are primarily used to maintain a healthy state and thereby to prevent disease. A healthy state is maintained by following some basic principles of lifestyle, a diet supplemented with some formulations/medications, and other practices that promote homeostasis between different body systems’ [24].

**Table 4**  
Tool to understand knowledge and its application at various levels as explained in Ayurveda philosophy.

Tools of knowledge	Level of application
<b>Aptopadesa:</b> Knowledge through teachings of seers who are one with nature	<b>Tattva</b> (principle) and <b>Vyavahara</b> (practice)
<b>Anumana:</b> Knowledge through inference including <b>Yukti</b> – causal relations, and <b>Upamaan</b> – comparative reasoning	<b>Sastra</b> (codification of knowledge – science)
<b>Pratyaksa:</b> Knowledge through direct perception including <b>yogaja pratyaksa</b> or intuitive cognition	<b>Vyavahara</b> (practice) and <b>Tattva</b> (principles)

At the interactional level, the approach to Ayurveda treatment involves reinforcing the capacity of the patient to fight disease and encourages individuals to take responsibility for their own health by rejecting the disempowered role of the submissive patient [3]. The emphasis is upon the perception of health as 'a value in itself' and upon the individual actively participating in the ongoing maintenance of their own good health. Every person is regarded as a unique and non-standard being. This uniqueness of each person is a product of a large number of variables that include factors of geography, climate, season, race, familial background, body constitution, and diet. Treatments vary according to the interaction and sensitivity of the patient/practitioner relationship. Today, with the standardisation, commercialisation and professionalisation of Ayurveda practice, this knowledge and understanding seems to have been lost.

In addition, an essential role of Ayurveda is to create balance and homeostasis, which is essential for the prevention of illness, whereas now its focus is on curative medicine [25] and the concept of 'curing disease'. There are currently no public health and preventive health care programmes being developed with Ayurveda knowledge, wisdom and perspective. For example, concepts like "*Achara rasayana*" which is the strategy for regulating behavioural and social conduct to ensure a healthy life in a healthy society and the use of non-pharmacological interventions related to lifestyle and diet which Ayurveda advocates, have been neglected in current practice and are not being used to develop public health programmes [26].

### 3.2.1. The professionalisation of Ayurveda

Since the 19th century Ayurveda practice has been based mainly on the modern concepts of health care delivery [27] where care is provided by professionals and is limited to clinical and hospital settings although a few exceptions exist. Because the modern Ayurveda education system is modelled on the process of nationalisation, standardisation, institutionalisation and scientisation of traditional medicine, Ayurveda practitioners are trained using a biomedical curriculum with a biomedical perspective of healthcare delivery. From this process has emerged a new biomedical Ayurveda vocabulary which includes words like, ayurgenomics, ayurnutrigenomics and ayurpharmacoepidemiology [28]. The professionalisation of Ayurveda parallels the professionalisation seen in current biomedical institutions in terms of policy, education and research [2,29] and the entire curriculum is designed to mimic the Bachelor of Medicine, Bachelor of Surgery (MBBS) degree course with a view to achieving equal status with bio-medicine.

As a result of professionalisation, traditions like Asta Vaidya and Ezhava in the State of Kerala [25], and the Puttur Kattu (Traditional bone setting practice) in Andhra Pradesh [30], which are examples of the practice of Ayurveda at the community level, are being lost. The current Ayurveda regulatory authority does not recognise these traditions and therefore potentially devalues the contributions of these highly skilled practitioners. Currently, there seems to be no interest or initiatives by policy makers to bring back these community based practices that have a profound connection and understanding of the intimate links between the human being, community and nature.

### 3.2.2. Bio-medicalisation

Today, the connection between local knowledge, resources and Local Health Traditions (LHT) is being lost. The codified systems are considered as *Sanskrit* streams of knowledge, the non-codified streams are *Prakrit* streams of knowledge, and they both interact. The exchanges between them continuously enhance practices and contribute significantly to a more coherent approach to health and

wellbeing [31]. The *Caraka Samhita* explains that the basis of Ayurveda knowledge is within local health traditions. Today this connection is disappearing and current Ayurveda policies and practice lack the insights and understanding of the importance of this knowledge.

In India, the diversity of the knowledge contained within the LHT is much greater than any codified tradition (eg. Ayurveda, Siddha, or Unani). A database at the Trans-Disciplinary University, Bangalore documents 6500 plants used in local traditions compared to 2500 plant species in the various codified systems. This information highlights the vast knowledge of LHT and today, Ayurveda practitioners neglect this knowledge and fail to understand that various components of their tradition have emerged from the Local Health Traditions held in communities.

### 3.2.3. Ayurveda's integrative approach: synergistic, pluralistic and multicultural

Ayurveda accepts alternative or even competing approaches to healing as parallel truths, which need not necessarily contradict each other [3]. It has always been progressive and inclusive, adopting an integrative approach to other systems. As stated in the Charaka Samhita, '*The science of life shall never attain finality. The entire world consists of teachers for the wise. Therefore, knowledge, conducive to health, longevity, fame and excellence, coming even from an unfamiliar source, should be respectfully received, assimilated and utilised*' [18].

The Ayurvedic texts contain relevant information on life in all its forms and varied conditions by discussing various allied topics [32]. To that extent its approach may be considered synergistic, pluralistic, and multicultural [3] and the classical Ayurveda texts are evidence of its highly interdisciplinary nature. This can be explained with an example from the *Charaka Samhita*, the various subject matters of medicine are prominently interspersed with material that may appropriately belong to the disciplines of religion, philosophy, psychology, ethics, and sociology. A significant proportion of the *Charaka* literature is directly concerned with the social aspects of medicine and life, and is mainly committed to concerns of medicine and sociology with a comprehensive explanation of philosophical, metaphysical, ethical, psychological, and religious issues appearing at regular intervals. These disciplines are considered to act as supporting structures describing basic ideas about life, health, ill health, and death, which form the base of the application of Ayurveda [3,33]. The neglect of this multifaceted approach in current practice is unfortunate.

### 3.2.4. Pharmaceuticalisation

The pharmaceutical industry has had a significant role to play in the process of medicalisation everywhere. Pharmaceuticalisation has focused studies on particular disease conditions or activities and has also explained them in bio-medical terms, looking for active ingredient or bio molecules for drug preparation. This process of social control has contributed to the loss of diversity, which is evident from the *Ayurvedic pharmacopeia of India* which legalises only 976 compound formulations and 540 mono-monographs of plant, animal and minerals (including metals) [34] when in fact there are more than 10000 formulations mentioned in the classical texts [27]. Industrialisation has also brought deviation from the 'basic forms of medicine (eg Juices, decoction, powders, etc) and concepts' of medicine preparation [35] thus reducing local use and preparations. In addition, insurance coverage for patients is limited to drugs from the pharma industries and does not cover drugs prepared at local or household level, thus discouraging the continuation of local processes used for the creation and production of drugs.

#### 4. Discussion

The Ayurveda understanding of health and wellbeing is an important approach that can be helpful for building today's health systems [36,37] and these systems need to be intimately connected to communities. It is important to remember that Ayurveda is about the 'knowledge of life', it is not about disease. Its unique and simple-to-understand way of classifying the human population based on individual *prakriti* or constitution [38] provides important knowledge for all communities. This knowledge has helped communities all over India to continue its use and many community cultural practices are based on *Dinacharya* and *Ritucharya* (daily and seasonal routines) [39] prescribed in Ayurveda to maintain positive health. Social-cultural research suggests that health and the social fabric of communities are related and the traditional health sciences are generally understood as well integrated in communities and share a common ethos with them to deliver social-culturally sensitive health care [40]. However, the current perspective on the standardisation and professionalisation of Ayurveda and the new approach to the training of Ayurveda practitioners has led to a disconnect between Ayurveda practice, its connection with the health system and its connections with the reality of community life and natural processes.

Efforts of organisations like the Foundation for the Revitalisation of Local Health Traditions (FRLHT) have succeeded in scientifically demonstrating community based solutions for prevention and management of diseases like malaria [41]. They have also demonstrated how many simple primary health care problems can be managed at household level using home herbal gardens based on local and Ayurveda knowledge. These examples, apart from their health and nutritional benefits, also demonstrate considerable cost saving [25,42,43]. Research from the Institute of Applied Dermatology in the Kasaragod district of Kerala also provides evidence of the effective management of skin diseases at the community level using Ayurveda knowledge [41]. These examples show the application and relevance of local and Ayurveda knowledge in changing approaches to health care in India today and in providing a counterbalance to the increasing growth and strength of the previously described medicalised approach to health. Individuals and communities need to be encouraged to make use of this knowledge to improve their own individual health, the health of their communities, the structures of the health system and ultimately the overall health of their societies.

There is a need to alter the current policies in India on health and wellbeing, and the role and use of LHT and Ayurveda. To begin with, a major emphasis is required at the level of Ayurveda education and its mechanisms of knowledge transfer, practice, and care delivery. The Ayurveda perspective and therefore its training, should go even wider than human health to the health of the environment and studies today show the importance of human–nature relation in maintaining health and wellbeing [44]. With knowledge of life, communities and nature, Ayurveda's holistic perspective is also needed and would be helpful in providing a more balanced approach to the struggle between the public and private sectors in health care. This approach will help to find ways of reducing the increasing domination of the pharmaceutical industry and its philosophy, which has contributed to the industrialisation of Ayurveda pharmacy and the medicalisation of health care and life. In helping to provide different insights into the health/illness of the humans and environment, through a focus on the conservation of natural resources, Ayurveda knowledge and practice emphasise that the connection between therapeutic landscapes and human health is a relational one [45].

#### 5. Conclusion

It is clear that medicalisation has narrowed the holistic perspective of Ayurveda leading to a large gap between the perspectives and practice of Ayurveda. This gap is now being expressed and translated into the policies that govern how Ayurveda is taught, learnt, and practised and this gap needs to be addressed if Ayurveda is to be useful in bringing back the importance of *Swastya* (being rooted within one self), into discussions around individual and community health and the sustainability of the health system. Through its knowledge and practices at individual, community and health care delivery levels, Ayurveda has the opportunity to improve the health and wellbeing of individuals and communities, making them more self-reliant, thus helping to make the Indian health system more resilient and sustainable. This can only be achieved however, if its holistic philosophy and perspectives are once again recognised, respected and allowed to balance the current process of Ayurveda medicalisation.

#### Sources of funding

None.

#### Conflicts of interest

The authors declare that there is no conflict of interests regarding the publication of this paper.

#### Acknowledgement

The authors thank Prof. Maarten Bode, Prof. Darshan Shankar and Dr. Unnikrishnan Payyappallimana for sharing their opinion and comments on the preliminary versions of this manuscript.

#### References

- [1] Manohar PR. Subjective well-being and health: a potential field for scientific enquiry into the foundational concepts of Ayurveda. *Anc Sci Life* 2013;33(2): 79–80.
- [2] Payyappallimana U, Venkatasubramanian P. Exploring ayurvedic knowledge on food and health for providing innovative solutions to contemporary healthcare. *Front Public Health* 2016;4:57.
- [3] Salema A, Valiathan MS, Malamound C, Raghunathan K, Wujastyk D, Walker T, et al., editors. *Ayurveda at the crossroads of care and cure. Indo-European seminar on ayurveda held in Arrabida, November 2001. Arrabida: Centro de História de Além-Mar; 2002.*
- [4] Rose N. Beyond medicalisation. *Lancet* 2007;369(9562):700–2.
- [5] Tomes N. Patient empowerment and the dilemmas of late-modern medicalisation. *Lancet* 2007;369(9562):698–700.
- [6] Halfmann D. Recognizing medicalization and demedicalization: discourses, practices, and identities. *Health (London)* 2012;16(2):186–207.
- [7] Morandi A, Tosto C, Roberti di Sarsina P, Dalla Libera D. Salutogenesis and Ayurveda: indications for public health management. *EPMA J* 2011;2(4): 459–65.
- [8] Sharma H, Chandola HM, Singh G, Basisht G. Utilization of Ayurveda in health care: an approach for prevention, health promotion, and treatment of disease. Part 2 – Ayurveda in primary health care. *J Altern Complement Med* 2007;13(10):1135–50.
- [9] Huber M, Knottnerus JA, Green L, van der Horst H, Jadad AR, Kromhout D, et al. How should we define health? *BMJ* 2011;343:d4163.
- [10] Basisht G. Exploring insights towards definition and laws of health in Ayurveda: global health perspective. *Ayu* 2014;35(4):351–5.
- [11] Zwier S. Medicalisation of food advertising. *Nutrition and health claims in magazine food advertisements 1990–2008. Appetite* 2009;53(1):109–13.
- [12] Morrison M. Overdiagnosis, medicalisation and social justice: commentary on Carter et al (2016) 'A definition and ethical evaluation of overdiagnosis'. *J Med Ethics* 2016;0:1–2. <https://doi.org/10.1136/medethics-2016-103717>.
- [13] Shankar PR, Subish P. Disease mongering. *Singapore Med J* 2007;48(4): 275–80.
- [14] Williams SJ, Coveney CM, Gabe J. Medicalisation or customisation? Sleep, enterprise and enhancement in the 24/7 society. *Soc Sci Med* 2013;79:40–7.
- [15] Collin J. On social plasticity: the transformative power of pharmaceuticals on health, nature and identity. *Social Health Illn* 2016;38(1):73–89.

- [16] Moloney ME. 'Sometimes, it's easier to write the prescription': physician and patient accounts of the reluctant medicalisation of sleeplessness. *Social Health Illn* 2016.
- [17] Ministry on AYUSH Gol. Annual report 2016–17. In: AYUSH Mo, editor; 2017. Delhi.
- [18] Patwardhan B, Joglekar V, Pathak N, Vaidya A. Vaidya-scientists: catalysing Ayurveda renaissance. *Curr Sci* 2011;100(4):476–83.
- [19] Manohar PR. Ayurvedic education: where to go from here? *Anc Sci Life* 2014;33(3):143–5.
- [20] Patwardhan K, Gehlot S, Singh G, Rathore HC. The ayurveda education in India: how well are the graduates exposed to basic clinical skills? *Evid Based Complement Alternat Med* 2011;2011:197391.
- [21] Srikanth N, Sreenivasacharya N, Ananthacharyulu N, Venkateshwarlu B, Sharma MM, Haripriya N, et al. An insightful exposition on sarvausadhi guna kalpakam: a less familiar compendium on Ayurvedic materia medica. *J Ind Inst Hist Med* 2008;38:171–8.
- [22] Rao BR. Ayurveasara or virabhattiya of revanasiddha. *Bull Indian Inst Hist Med* 1990;20:1–6.
- [23] Nishteswar K. Basavarajeeyam: a historical perspective. *Ayu* 2011;32(4):458–60.
- [24] Valiathan MS. Bioethics and ayurveda. *Indian J Med Ethics* 2008;1:29–30. January–March.
- [25] Payyappallimana U. Traditional medicine in health system developmen a case study of Kerala state, India. *Yokohama J Soc Sci* 2010;15(3):77–101.
- [26] Patwardhan B. Adding life to years with Ayurveda. *J Ayurveda Integr Med* 2012;3(2):55–6.
- [27] Shankar D. The need to get over the colonial health policy. *Anc Sci Life* 1997;16(3):232–9.
- [28] Debnath P, Banerjee S, Adhikari A, Debnath PK. Ayurpharmacoevidence epidemiology en route to safeguarding safety and efficacy of ayurvedic drugs in global outlook. *J Evid Based Complementary Altern Med* 2017;22(2):294–8.
- [29] Bode M, Shankar P. Ayurvedic college education, reifying biomedicine and the need for reflexivity. *Anthropol Med* 2017;1–14.
- [30] Panda AK, Rout S. Puttur kattu (bandage) – a traditional bone setting practice in south India. *J Ayurveda Integr Med* 2011;2(4):174–8.
- [31] Patwardhan B. Historical future of ayurveda. *J Ayurveda Integr Med* 2013;4(4):189–92.
- [32] Valiathan MS. Ayurvedic biology: the first decade. *Proc Indian Natl Sci Acad* 2016;82:13–9. March 2016.
- [33] Valiathan MS. Caraka's approach to knowledge. *Indian J Hist Sci* 2016;51(1):33–9.
- [34] Joshi VK, Joshi A, Dhiman KS. The Ayurvedic Pharmacopoeia of India, development and perspectives. *J Ethnopharmacol* 2 Feb 2017;197:32–8.
- [35] Subhose V, Srinivas P, Narayana A. Basic principles of pharmaceutical science in Ayurveda. *Bull Indian Inst Hist Med Hyderabad* 2005;35(2):83–92.
- [36] Ravishankar B, Shukla VJ. Indian systems of medicine: a brief profile. *Afr J Tradit Complement Altern Med* 2007;4(3):319–37.
- [37] Dhanukar SA, Thatte UM. Role of ayurveda in health care. *J Res Ayur Sci* 1995;16(1–2):72–81.
- [38] Patwardhan B, Bodeker G. Ayurvedic genomics: establishing a genetic basis for mind-body typologies. *J Altern Complement Med* 2008;14(5):571–6.
- [39] Jangid C, Vyas HA, Dwivedi RR. Concept of Ritus and their effect on Bala. *Ayu* 2009;30(1):11–5.
- [40] Bode M, Hariramamurthi G. Integrating folk healers in India's public health: acceptance, legitimacy and emancipation. *ej Ind Med* 2014;7:1–20.
- [41] Narahari SR, Bose KS, Aggithaya MG, Swamy GK, Ryan TJ, Unnikrishnan B, et al. Community level morbidity control of lymphoedema using self care and integrative treatment in two lymphatic filariasis endemic districts of South India: a non randomized interventional study. *Trans R Soc Trop Med Hyg* 2013;107(9):566–77.
- [42] Nagendrappa PB, Naik MP, Payyappallimana U. Ethnobotanical survey of malaria prophylactic remedies in Odisha, India. *J Ethnopharmacol* 2013;146(3):768–72.
- [43] Nagendrappa PB, Annamalai P, Naik M, Mahajan V, Mathur A, Susanta G, et al. A prospective comparative field study to evaluate the efficacy of a traditional plant-based malaria prophylaxis. *J Intercult Ethnopharmacol* 2017;6(1):36–41.
- [44] Seymour V. The human-nature relationship and its impact on health: a critical review. *Front Public Health* 2016;4:260.
- [45] Brown T, Bell M. Off the couch and on the move: global public health and the medicalisation of nature. *Soc Sci Med* 2007;64(6):1343–54.