ART OF LIVING

Ayurveda is, perhaps, the longest unbroken health tradition in the world

RAMA JAYASUNDAR

A GROUP of students and scholars make their way to the picturesque foothills of Himalayas. The curious onlookers whisper among themselves: "Look! There goes the famous Punarvasu Atreya, the eminent disciple of great Bharadvāja, leading the international congregation of ayurvedic doctors from across the country and beyond." The crowd hears Agnivesha, one of the students, say: "Our teacher Atreya has asked the six of us, his students, to record the proceedings. In the very first chapter, you will find mention of all the names of the participating ayurvedic physicians. My work will be called *Agnivesha Tantra.*"

Agnivesha leaves in a hurry as his other classmates Bhela, Jatūkarna, Parāśara, Hārita and Kṣārapāṇi call out to him. Little did he realise then that his work would be redacted centuries later by Charaka and would come to be known as *Charaka Samhita*.

The world is waking up to the rigorously documented clinical experience and pharmacopoeia of ayurveda, the basic aim of which is to maintain the health of a healthy person and offer treatment to a diseased person.

Long the main healthcare system in India, the origin of ayurveda is lost in the mists of antiquity. It suffices to say that codified ayurveda would antedate Hippocrates by many centuries. Ayurveda's history and development are closely interwoven with India's, to the extent that ayurvedic knowledge has had a very deep impact on the lifestyle of its people. In almost every household, there was (and still is) knowledge of ayurvedic treatment for common ailments. Handed down through generations, every family had its own time-tested formulations for a wide range of health conditions. A number of medicines could be prepared at home from commonly available ingredients and herbs. Ayurvedic principles of healthy living were incorporated into daily routines, as was reflected in the daily regimens, traditional use of spices and medicinal ingredients in cuisines and even religious rituals. Ayurveda has thus had a pervasive influence on the daily life of Indians and is, perhaps, the longest unbroken health tradition in the world.

THE ||SandHI|| SERIES

A large body of ayurvedic knowledge and experience has been preserved in texts written not only by practitioners of yore, but also successive physicians, indicating the continuity of this indigenous medical system.

Ayurveda has its roots in the Vedas from which, many Indian philosophies have sprung. Ayurvedic terminologies, names, therapeutic properties and use of more than 360 plants are mentioned in Vedas [289 in *Atharva*, 67 in *Oushadhi Sukta* of *Rg* and 82 in *Yajur*]. Ayurvedic subjects are also dealt with in the *Aranyakas, Brahmanas* and *Upanishads*. For example, the *Garbhopanisad* discusses growth of foetus and mentions the three doshas (*vata, pitta, kapha*) and *dhatu* (tissue elements). Ayurvedic terms, plants, their medicinal properties and formulations, such as *mrtasanjeevani* and *vishalyakarani,* find mention in *Ramayana* and *Mahabharata*.

Ayurveda is a melting pot and sandhi of a number of disciplines, a proof that knowledge was not compartmentalised in ancient India. Ayurveda is associated with and draws from wide-ranging subjects. For example, *vrksha ayurveda* (plant science), *mrga ayurveda* (veterinary science), yoga, philosophy, metallurgy (for making surgical instruments), civil engineering and architecture (construction of hospitals and pharmacies), astronomy, ethics, water management, mathematics (calculations, units of measurements, weights and measures, concept of time, etc.), culinary science, chemistry and pharmacology (for preparing medicines), diet and nutrition and agriculture. Just as allopathy has drawn from the basic sciences (physics, chemistry and mathematics), ayurveda uses *'darshanas'*, namely Kanāda's *Vaiseshika,* Gautamā's *Nyāya,* Jaimini's *Purva Mimāmsa,* Kapilā's *Sānkhya,* Patanjali's Yogā and Vyāsa's *Uttara Mimāmsa.*

Some of these logical and philosophical schools of thought of ancient India are materialistic, concerned with the organic structure of the universe while others deal with evolution and their philosophical implications. The systematised science of ayurveda epitomises their practical applications by using the traditional theories such as evolution, *tridosha, triguna, panchamahabhuta, karma* (cause-effect relationship), *anu* and *paramanu* (analogous to 'atoms' in the sense of the building blocks of physical matter), interrelatedness and methods to analyse problems in a scientific and logical manner (*Nyāya* and *Mimāmsa darshanas*).

Turn to Page B

Budha Chandra

Tech know

TRUE OR FANTASY

Scientists in China described one of the weirdest flying creatures ever discovered, a pigeon-size dinosaur with wings like a bat that lived not long before the first birds. The dinosaur, named Yi qi (meaning "strange wing" in Mandarin), lived about 160 million years during the Jurassic Period, about 10 million years before the earliest-known bird, Archaeopteryx.

GHOST STORIES

Neuroscientists have succeeded in creating 'ghosts' in the lab by tricking the brains of test subjects into feeling an unexpected 'presence'. Under normal circumstances the brain is able to form a unified self-perception, but lead researcher Olaf Blanke explained that when this malfunctions the brain creates a second presentation of its body.

JABBIN' FUTURE

Harvard researchers have developed a new bio compatible hydrogel that can be filled with cells or molecules and injected in the body to deliver drugs or stimulate tissue regeneration. By tuning their shape, physical properties and chemical composition and infusing them with cells, biomedical engineers have successfully used hydrogels as 3D molecular scaffolds.

Inside story

Brace up

India is taking cyber security lightly despite 26% of world's attacks originate here page C

Floating solutions

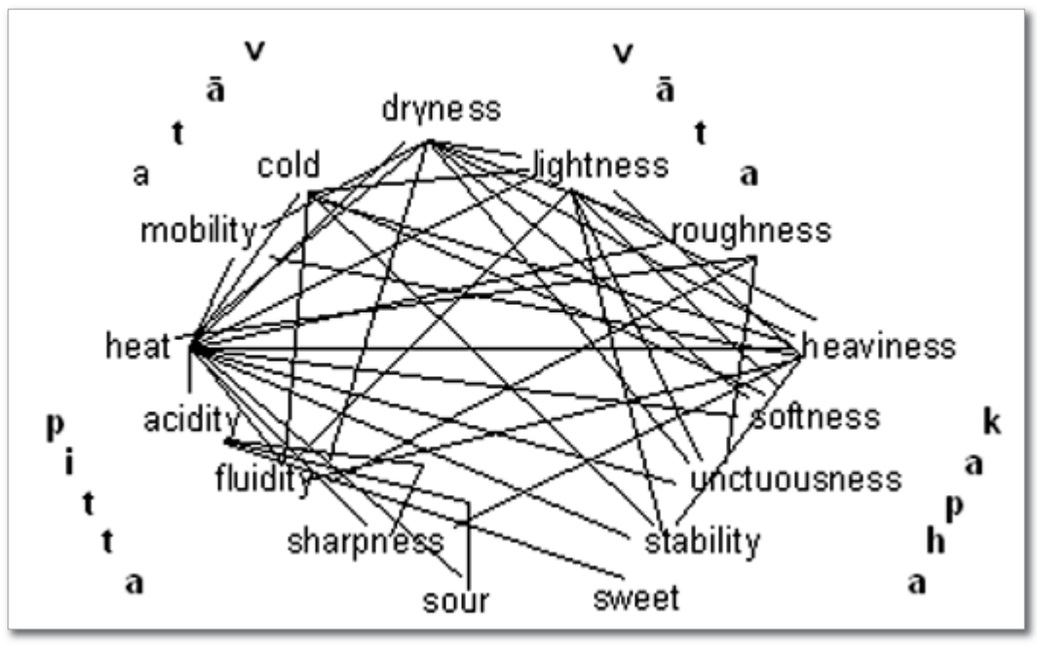
Cloud technology has enabled HR to move from transaction-based to strategic page C

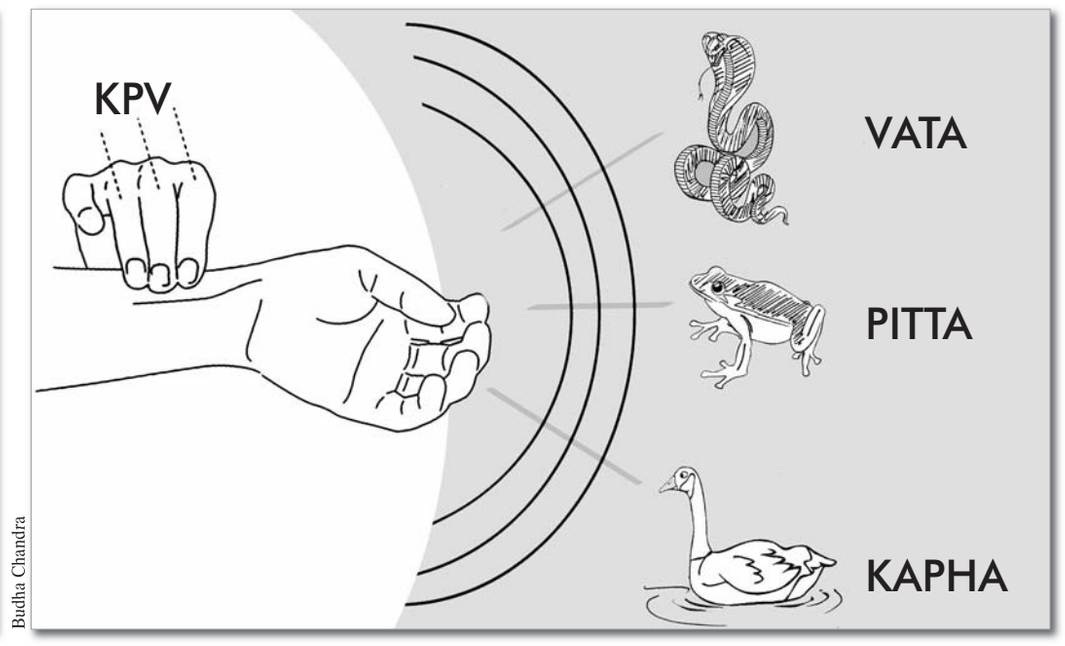
Have you app-ed up?

Mobile apps offer a plethora of possibilities for your smartphone page D

Looking into the past for the future

From P1





Budha Chandra

DECODING HEALTH: Network of the vata, pitta and kapha factors — the key to health is the stability of these factors

Adopted from *Tarka shastra* (science of dialectics, logic and reasoning), ayurveda stresses the importance of rational thinking and discourages blind dogmatic acceptance.

These various theories and concepts give rise to ayurveda's theoretical framework, under which, it has put together an enormous body of observational data. These theories and practices forming the backbone of ayurveda have been documented, validated by practice over many centuries and continue to be validated, and have, thus, stood the test of time. Just as modern medical texts do not discuss individual cases but present consolidated results, ayurvedic texts also present consolidated observations spanning over many centuries. A chronological analysis of these texts shows an increasing knowledge of diseases, pharmacopoeia and treatment regimens.

The human body is a complex biological entity providing a wide scope for multiple perspectives. In western medicine's predominantly structural hierarchical viewpoint, atom is at the lowest level, forming the basic building block of the human body. Atoms make molecules, which in turn progressively form cells, tissues, organs and organ systems such as skeleton, endocrine and reproductive systems. The entire human system is reduced to the fundamental unit of matter, for which reason this is known as a reductionist perspective.

Ayurveda's perspective of the human body is predominantly functional. Although, a number of theories contribute to ayurveda, the theory of *tridoshas* [*vata* (V), *pitta* (P) and *kapha* (K)] runs as an undercurrent to its understanding of health and ill-health. Ayurveda has identified three key functions, namely, movement *(vata)*, transformation *(pitta)*, and growth and support *(kapha)*. VPK also includes parameters, which are biophysical, chemical and physiological in nature, contributing to the core function of that particular category.

TOOLS & TECHNIQUES: Tools used for ayurvedic surgery on display at Muniyal Institute of Ayurveda Medical Sciences in Karkala (left); commonly available ingredients and herbs that people in India have incorporated in their daily routines and religious rituals

For example, dryness is included in V, increased temperature in P and unctuousness in K. All the parameters under V, P and K are intra-and-interconnected, forming a network (see figure above). The key to health is the stability of these factors in the network, with disease seen as a perturbation.

The concept of innate unity and mutual interrelationship of everything in the universe is central to *Uttara Mimāmsa darshana*. Ayurveda has integrated this concept of interconnectedness into its understanding of health and disease by considering the human body as an indivisible whole with a network of interrelated functions, mind and consciousness.

The hypothesis of interrelatedness elaborated in *Uttara Mimāmsa* thus finds practical expression in ayurveda.

The core idea of the human system as interconnected functions and system properties, and not merely a structure made of atoms and molecules, is unique and gives ayurveda an enormous advantage in dealing with the human body in a holistic way. That ayurveda recognises the importance of the mechanical aspects of human body can be inferred from the well-developed branch of surgery in those days.

Sushruta, the ayurvedic surgeon is acknowledged as the father of surgery even by present day surgeons. Yet, ayurveda is based on principles that go beyond the purely mechanical view, i.e., a vision of wholeness, functional interdependence and unity.

Ayurveda has incorporated the theory of V, P and K in an interesting way into its diagnosis and therapeutic management. Factors such as dietary ingredients, plants, physical and mental activities, seasons and clinical symptoms have a role in health, disease and treatment, and are also classified and explained in terms of V, P and K. For instance, the dietary ingredient of wheat increases K; activity such as exercise increases V; and autumn season increases P.

Example of classification of clinical symptoms in terms of V, P and K is: skin disorder — dryness indicates involvement of V, reddishness and burning sensation that of P, and pruritus and exudation that of K. VPK provides a theoretical framework within which all clinical symptoms can be interpreted — no clinical symptoms lie outside the purview of VPK.

VPK thus serves as a common platform for all the factors (plants, food ingredients, activities, seasons and clinical symptoms) contributing to health and disease. From a clinical stance, it provides a common interface facilitating easy conversion of all diagnostically and therapeutically relevant parameters to a common denominator, enabling a VPK-based diagnosis and treatment. The ayurvedic therapeutic strategy is, therefore, different but comprehensive, addressing all causative factors and incorporating all the therapeutically relevant parameters such as medicines, diet and activities.

From inception, Ayurveda has recognised eight main specialities. They are:

1. ***Kaya chikitsa*** - internal medicine

2. ***Shalakya tantra*** - diseases of head and neck. This branch is roughly equivalent to ophthalmology and otorhinolaryngology (ENT) medicine. Surgical techniques as well as herbal treatments for conditions such as cataracts are included in this.

3. ***Shalya tantra*** - surgery. Surgery had a very important place in ayurvedic medicine. It covers topics such as anatomy, physiology and surgical interventions such as cataract, rhinoplasty and otoplasty

4. ***Agada tantra*** - toxicology. It deals with classification and treatment of all types of toxins, including air and water pollution, and bites of poisonous animals.

5. ***Kaumarabhrtya*** - paediatrics. All topics related to children, their pre-natal and post-natal health, growth and childhood diseases are covered. It also covers extensively, health and diseases afflicting women. Health of women is given utmost importance in ayurveda as their health determines and influences the health of a child not only while in the womb, but also later on.

Accordingly, the subjects concerned with conception and its protection, support and nourishment, and delivery come under the purview of *kaumarabhrtya*. This is equivalent to today's speciality of obstetrics and gynaecology.

6. ***Rasayana*** - rejuvenation. This branch deals with prevention of diseases and ensures long, healthy life. It is concerned with healthy diet, lifestyle and codes of behavioural conduct.

7. ***Vajikarana*** - this branch deals with producing physically, mentally and emotionally healthy progeny. These medicines rejuvenate, increase sexual potency and efficiency, and also treat infertility.

8. ***Bhutavidya*** - deals with diseases caused by unseen and invisible factors. This includes infections and psychiatric disorders.

Ancient rishis studied nature for its underlying patterns and ayurveda has accepted the Vedic hypothesis that there are common principles underlying the microcosm (individual) and macrocosm (universe). Humans (animals and even plants) and the universe are composed of the same basic elements and follow the same physical laws. Ayurveda deals with *manushya* ayurveda (dealing with humans), *mrga* ayurveda (veterinary science) and *vrksha* ayurveda (plant science/botany). The same fundamental principles of V, P and K apply to all of them (humans, animals and plants).

In ancient India, equal importance was given to the maintenance of health of humans, animals and plants alike. *Vrksha* ayurveda describes the entire life cycle of plants in addition to prevention and cure of plant diseases. It discusses the origin of plant from seed, rules of plantation, ideal agricultural practices, seasons of plantation, harvesting and reproduction, different parts of plants, their structure and functions, and diseases afflicting them.

Allopathic medicnes are successful in dealing with surgical conditions and medical emergencies. However, there are increasing number of diseases, which are not single entities, but complex with one leading to another. The best example is obesity, which leads to a number of other diseases such as cardiovascular disease, diabetes, cancer, osteoarthritis and sleep apnoea. As the world faces increasing chronic, psychosomatic, stress and lifestyle-related disorders, ayurveda with its unique approach, holistic perspective, emphasis on diet and lifestyle activities, and time-tested clinical practices can play a crucial role.

As a healthcare system, it can empower the individual with a healthy way of life. Ayurveda is not a reminder of a past glory but an example of Indian knowledge system having contemporary and increasing relevance. Its experience and expertise accumulated over several millennia should be used to benefit suffering people. ■

(Dr Rama Jayasundar is a physicist and an ayurvedic physician, in the department of nuclear magnetic resonance (NMR) at AIIMS, New Delhi)

NEXT WEEK
Michel Danino on Indian ecological traditions

Know the nitty-gritties of return-on- investment

M Muneer

COMPANIES invest considerable resources in CRM software across the world. Yet, the ROI (return on investment) of such investments is still not up to the expectations. Perhaps the reason is also because of not having the right metrics. Customer-oriented marketing metrics that measure the ROI for marketing programmes need to successfully target specific customer groups for knowing the real results.

All CRM plans hinge on implementing an IT project and software that consolidates data about a single customer on a single customer service screen. Although this one-on-one plan is a great thing to do, a company that cannot differentiate between customers with whom spending time can improve profits and customers who do not produce sufficient profits to warrant expensive marketing interactions, will not get the results the IT vendor has promised.

Four basic issues thwart a company's ability to achieve the promised ROI. The first is the inability to differentiate between customers who represent future value for the company and those who do not. For telecom companies, 20 per cent of customers give over 100 per cent of total profits. Spending a disproportionate amount of time and resources on customers who are unprofitable and likely to remain so drags on the ROI. This is true even if a company has all of a customer's information in a single location.

The second is the inability to recognise how to treat a customer who is profitable or can be made profitable with an effort that also produces a good ROI. As an example, consider two bank customers who are equally profitable. One of the customers has 15 years of tenure, four different banking products and is retired. This customer is less likely to search for another bank, so meeting his needs and responding to him courteously and promptly is a low-cost way of maintaining an excellent relationship. The other customer uses only two of the bank's products, has two years of tenure and a history of growing balances. He may be a good candidate for a deeper and more profitable relationship if the bank actively markets new products and services.

The third basic issue is failing to develop a sense of the attributes of valuable customers. Companies can use many techniques to understand the basic motivation for making an initial buying decision and turn the customer into a loyal advocate. Marketeers can identify the preferred channels of communication and determine initial product and service offerings.

Finally, once the above three elements are understood and a company has developed acquisition, cross-selling and retention marketing programmes, marketeers need to develop ways to measure results. Companies must develop sales reporting that matches how the customer base is categorised. Instead of traditional product reporting, marketeers should develop a top-line report that measures how well the firm acquires new customers and the revenue and profitability of newly acquired customers. The acquired customers should be matched against customers who were targeted to show that their profitability matches the company's expectations.

Existing customers should be measured separately and slotted into several categories, including those who will remain profitable with little extra effort; those who will increase profits with little extra effort; those who require effort to retain their current profitability; and those with whom a sustained effort will have a large ROI. By viewing each customer type separately, the company can understand how well their efforts are paying off and how to allocate marketing funds to the various customer categories to optimise present and future profitability.

Lost customers need to be measured as well. The maxim is that retaining and growing an existing customer is more profitable than attracting a new one. But measuring lost customers can reveal whether these customers are actually causing lost profits or if their loss means an increase in profitability. Existing systems can take this top-line, customer-oriented measurement method and analyse ways to improve marketing performance. Marketeers can identify the products that help acquire new customers profitably, along with the media that attracted those customers. Analyse marketing and advertising over longer periods of time to determine if specific efforts attract more profitable and durable customers.

Customers do not bring profits to companies at equal rates nor do they respond to marketing programmes in the same way for the same reasons. A well thought out analysis and results measurement process that illustrates how customer groups provide differing profits and differ in their likelihood to be loyal, will help in a long way to make better ROI of the relationship efforts. ■

(The author is CEO and managing director of CustomerLab)