Guest Editorial

Seven Shields of Ayurveda between Health and Diseases

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Global health challenges are increasing. So are the costs. Despite large progress in healthcare, the world is far from achieving the health related sustainable development goals. Is there any answer to this global crisis? Here we propose that seven shields of Ayurveda can indeed reduce the years lived in morbidity and extend healthspan (i.e., disease-free lifespan). People today are approaching the age of decay much earlier, particularly in India. For example, non-communicable diseases NCDs are normally present in individuals aged 55 years or older in many developed countries, yet their onset occurs in India a decade earlier, i.e., ≥45 years of age (1). The reason is that a large majority of population has breached the six, out of seven, fortifications or ramparts that must exist between healthspan and morbidity. These are Ahara (diet), Vihara (lifestyle), Swasthvritta (healthy regimen or code of personalized health-conduct), Sadvritta (code of personal good-conduct), Panchakarma (five procedures for periodic detoxification), Rasayana-Vajikara (rejuvenation and restoration of vitality and vigour), and Aushadhi (medicine).

All these seven shields are concurrently and equally important. Yet, their sequence noted above matters in health management. When we allow the first six walls to rupture, as we often do and as is evident from the discussion that follows, that leaves us with a limited choice—resorting to medicines a little too early. When the shield of medication fails, we die.

Recent studies under the auspices of the Global Burden of Diseases, Injuries, and Risk Factors Study 2017 (GBD 2017) as well as assessment of health-related Sustainable Development Goals (SDGs) show that many health-related SDG indicators including non-communicable diseases (NCDs) and NCD-related risks will require a determined effort to shift away from curative interventions, particularly in case of NCDs, towards multi-pronged, prevention-oriented policy action and investments to achieve SDG aims. For example, meeting the SDG targets by 2030 necessitates a pace of progress that no country has been able to achieve until now. Thus, our actions—or inaction—today will ultimately dictate how close the world can get to leaving no one behind by 2030 (2).

State of health in India, where 18% of the world’s population now lives, is in an even more challenging position. Prevalence of most leading NCDs has increased substantially from 1990 to 2016 in India. The major risk factors for NCDs, including high systolic blood pressure, high fasting plasma glucose, high total cholesterol, and high body-mass index, all have increased between 1990 and 2016 (3). In 2016, cardiovascular diseases alone contributed 28·1% of the total deaths and 14·1% of the total Disability Adjusted Life Years (DALYs), compared with 15·2% and 6·9%, respectively, in 1990 (4). Increasing burden of diabetes in India is another case in point where Ayurveda has a large preventive role to play (5). The prevalence of diabetes in adults aged 20 years or older in India increased from 5·5% in 1990 to 7·7% in 2016. Moreover, for every 100 overweight adults aged 20 years or older in India, there were 38 adults with diabetes, compared with the global average of 19 adults in 2016 (6).

Geriatric problems are another cause for concern. The percentage of people scoring lower Katz index, indicating
severe and mild disability, in at least one of the three activities of daily living (ADLs: walking, toileting and dressing) is very high in India (17.91% for males and 26.21% for females). It is crucial to reduce chronic morbidity in a timely way to minimise the enormous associated burden of disability (7).

Form a large pool of robust scientific studies, these are just a few examples to facilitate an understanding about the necessity of preventive healthcare in India and elsewhere. Since the strategies and principles discussed here have larger relevance and applicability to public health (8), we now turn to the seven shields that must form core of the preventive strategies. We hope that the ideas discussed here may also contribute to translational medicine in Ayurveda (9).

On preventive healthcare, there are Sutras in the Charaka Samhita that seem simple and intuitive. Yet, examined from the perspective of the keywords and related principles embedded in each of these Sutras, there are about half a million research papers that have been published in the world’s best journals. Although these papers do not specifically mention Ayurveda, yet an overwhelming majority support the conclusions drawn in antiquity—sometimes during 8000 to 5000 years ago. The three factors—intellectual error, unbalanced use of senses and the effect of time—are the causes of all disorders. Likewise, the remedy of all disorders lies in the balanced use of intellect, senses and time (see, Ch. Sha, 2.40). The saint-scientist Charaka further elaborated his terse verse and noted that if we use wholesome diet, healthy lifestyle, conduct ourselves after analysis, avoid being bonded to sensual pleasures, give people who are in need, observe equality, truthfulness, and forgiveness, and respect the respectable, we can remain free from diseases. When our intellect, speech and actions are aimed at happiness, with mindfulness and clear understanding, and promptness in knowledge, self-restraint, and yoga, we do not fall victim to diseases (see, Ch. Sha, 2.46-47).

While these Sutras alone are instructive in appreciating the principle of the seven shields, it would be useful to discuss each of these strategies, along with the contemporary scientific understanding. Developing this understanding is necessary for common people, but it must now form part of prescription by Ayurvedic physicians in their customized and individualized prescription to extend the healthspan of people. In examining a patient, a large number of factors are taken into consideration. Yet, in contemporary times, it is useful to understand whether or not the patient has breached the seven protective shields, and if so, to what extent. That data will be helpful in prescribing specific instructions on diet, lifestyle, exercise, sleep, code of personal ethics and health conduct, detoxification, rejuvenation, and medication.

While it is beyond the scope here to deliberate the seven protective walls comprehensively, it would nevertheless be useful to discuss the vital importance of some of these, briefly.

Diet, food and beverages are the fundamental strategy for managing health according to Ayurveda (10). While scientific studies of health-promoting aspects of food are large, two messages stand out. First, globally, in 2017, consumption of nearly all healthy foods and nutrients was suboptimal (topped by low intakes of nuts and seeds, milk, and whole grains), whereas that of all unhealthy items exceeded the recommended level (eg., sugary beverages, processed sugar, sodium, and processed meat). Second, the burden of disease attributable to dietary factors was huge. Indeed, in 2017, 11 million deaths and 255 million disability-adjusted life-years (DALYs) were attributable to dietary risk factors globally (11).

Ayurveda places a large emphasis on daily intake of fruits—such as Amalaki, Dadim and Draksha—by making them nityasevaneeya (part of regular diet) (12). Risk reductions for total mortality in the order of 35%—and specifically of 27% to 39% for cardiovascular and non-cardiovascular death—were found for even three to four servings per day of fruits, vegetables, and legumes compared with fewer than one serving per day. Benefits appear to be maximum for both non-cardiovascular mortality and total mortality at consumption of 375–500 g/day (13).
Many of the Ayurvedic food items are multifunctional. They are simultaneously food, rejuvenators and medicine. These are super-foods. These include dates, grapefruit, raisins, almonds, sesame seeds, gooseberry, garlic, ginger, black peppers, pippali, turmeric, saffron, cumin, coriander, honey, cow-milk, cow-ghee and triphala. If taken appropriately, they help in free-radical scavenging and oxidative-stress reduction. They also reduce inflammation (14). Food should, however, be taken only when hungry (i.e., when earlier food is fully digested). Likewise, on the quality, quantity and timing of diet, although much remains to be understood in contemporary science, yet Ayurvedic and scientific insights are now largely moving towards coherence (15-17).

On the protective strategy known as Vihara (lifestyle) in Ayurveda, an overwhelming body of scientific and medical literature unequivocally supports the idea that lifestyle is medicine. In particular, Vyayama (physical activity) and Nidra (sleep) have been the subject of large research (18). They form pillars of good health, and are as important as diet in extending the healthspan and delaying the age-related pathogenesis. While there is a large body of research on various aspects of sleep, it is necessary to take minimum 7 hours of sleep during night. Sleep duration should not exceed 8 hours though (19). Sleep during the day, except when fatigued or ill, is unhealthy.

Physical activity confers large benefits—all of those that are noted in Ayurveda—including healthy ageing. Physical activity not only enhances healthy ageing by 39%, it is also associated with a reduction in obesity, weight gain, coronary heart diseases (CHD), type-2 diabetes mellitus and the age-related diseases of dementia and Alzheimer’s disease. In addition, physical activity has been consistently linked to decreased all-cause mortality rates, probability of long survival, good health and function during older age as well as to cognitive performance (20). Seen from the perspective of the economic burden of physical inactivity, a global analysis of major non-communicable diseases found that the cost of physical inactivity to healthcare systems was international $ (INT$) 53·8 billion worldwide in 2013, of which $31·2 billion was paid by the public sector, $12·9 billion by the private sector, and $9·7 billion by households (21).

Investing in Vyayama (exercise) daily totaling to 150 minutes per week is necessary (22). Vyayama and other daily routines prescribed in Ayurveda confer longevity and health, perhaps by way of maintaining the integrity of circadian rhythm, that otherwise can trigger fatigue, disorientation, insomnia and increased susceptibility to many diseases (23).

Ayurveda recommends sadvritta (ethics), designed to instill conscientiousness, emotional stability, stronger social relationships, less loneliness, resilience, persistence, optimism, altruism, compassion and self-restraint. Non-adherence to these strongly increases the risk for engaging in behaviours that deteriorate healthspan and shorten the lifespan. Sadvritta confer health and control in sense organs. Science, Samhitas and experience are fully coherent in demonstrating that conscientiousness is among the best predictors of longevity and healthspan. Even moderately conscientious individuals have 50% lower rates of mortality compared to the ones non conscientious (24, 25).

For extended healthspan, Ayurveda recommends a set of daily routines including waking and sleeping, elimination, hygiene, massage, mindfulness practices, diet, work, and travel all during the course of the day and night. The routine calls for optimal times to awake, sleep, oral care, care of eyes, nose, ears and skin. Routines also include cleansing procedures, bowel habits, yoga, breath practices and application of oil all over the body. All these maintain the synchronicity of circadian rhythms with time of the day, night and seasons (dinacharya, ratricharya, ritucharya) and to prevent or delay ageing (23).

Panchakarma or periodical detoxification, purification, and rasayana and vajikara are highly recommended for strength and nourishment to the deeper tissues or Dhatu and to delay age-related pathogenesis. Research now has some evidence to support the position of Ayurveda that
even during an impending societal collapse, panchakarma can rescue lives and bestow health (Ch.Vi.3.12).

*Rasayanas* are among the most researched drugs of Ayurveda. They confer longevity, memory, intelligence, freedom from illness, youthfulness, excellent body-lustre, complexion and voice, strength of physique and sense organs, perfect speech, respect and brilliance (Ch.Chi. 1.i.7-8). *Rasayanas* keep *dhatus* (body cells and tissues) in healthy condition. They are the best and safest antioxidants known to humanity. A leading cause of age-related pathogenesis is the inability, impairment or inefficiency in the DNA repair mechanisms. This leads to numerous disorders including cancer, neurodegeneration and a large majority of diseases of old-age. Progressive accumulation of DNA damage due to diminished rate of DNA repair is one of the key mechanisms of ageing. The ability of the cells to sense and repair the DNA damages deteriorate with age, and thus accelerates age-related pathogenesis. A pertinent question is, can rasayanas promote DNA repair in ageing individuals? Here, for example, as the degree of balance between the rate of DNA damage and rate of repair needs to be maintained, the recent research suggests that Amalaki rasayana among others may contribute to maintenance of such a balance (26, 27).

In conclusion, the key message emanating from this brief analysis is that Ayurveda has much to offer in both prevention and treatment of diseases, but the potential can only be realized by employing a comprehensive and holistic approach embodied in the philosophy of seven shields of Ayurveda between health and diseases. Every breach of the seven walls we discussed here, accumulates personal disease-risks and health debt that finally results in faster pace of pathogenesis and ageing. These brief, but evidence-based insights may be useful to practicing physicians of Ayurveda in enhancing the healthspan of citizens in times of health crisis that the world faces today.

References


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