

Scope of Research in Ayurveda - Future Insights

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ABSTRACT

Ayurveda is not just a medical system that treats a few diseases; rather, it is the way of life and the intelligence of life and nature, ayurveda teaches us how to live in sync and harmony with nature. The Ayurveda sector seems to be carrying a triple burden of conflicting challenges. On first front there are increased national and global expectations; on the second front, the sector is experiencing severe deficiency in capacity building, human resource development, and education; while on the third front its practice and research are experiencing severe stagnancy. An important lesson from the study of Ayurveda's history is revelation of its original spirit of curiosity, questioning, and experimentation as a means to being a progressive science.

It is high time to practice the spirit of Charaka, when he said 'Let our vision grow and our quest never end'

Ayurveda needs to bridge this gap through imaginative and dynamic efforts with futuristic vision, where it is able to adapt various scientific technologies which helps in evolving ayurveda in a better way.

KEYWORDS: Ayurveda, future, research

INTRODUCTION

Living the life healthfully is the prime motto of this era. Despite the fact, there is much advancement in medical science with intention and pioneering investigative tools plus deep knowledge of human structure and its physiology, there has been no significant control over diseases. Rather, our society is witnessing a rise in various lifestyle disorders, chronic disease and increasing resistance to the existing remedies. Because of increased use of pesticides, chemicals, preservatives, sedentary life style, increased use of antibiotics and immune suppressive drugs, the quality of life is getting affected.

Human immunity is at an all-time low, considering the way the corona pandemic has engulfed the entire population, Its utmost need to address this issue, which can be possible by natural medical stream AYURVEDA in which maintaining and preserving health is the very first objective.

To achieve this objective, daily and seasonal regimen, code of conduct and social behaviour are mentioned in Ayurveda along with implication of Rasayana.

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Conservation of Immunity, physical and psychological is the way to achieve the normal lifespan. Ayurveda is the science of life, which has effective solution to overcome the physical as well as psychological health problem¹.

Ayurveda and Nutrition: Rapid changes in diet and lifestyle led to a major emerging shift towards non-communicable diseases (NCDs) such as lifestyle related disorders (diabetes, obesity, arthritis, mental illness, cardiac diseases, cancer etc.) and Ayurvedic principles certainly play an important role in their prevention and management. Health-promoting regime (pathya vyavastha) is the hall mark of Ayurvedic therapeutics; specific diet and lifestyle guidelines are always prescribed along with the drugs and therapies to facilitate restoration of homeostatic bio-mechanisms (dhatu-samyata) and wellbeing. Therefore, emphasis on diet planning based on Ayurveda principles would certainly help in health promotion, prevention of diseases and their management.

Evidence base of some rasayana interventions: Potential leads for development of Nutraceuticals

Plants/Interventions	Activity
Brahmi (<i>Bacopa monnieri</i>)	Anti-stress activity Improves cognitive functions and memory
Mandukparni (<i>Centella asiatica</i>)	Alterative, common nervine tonic, cooling, cardio tonic
Amalaki <i>Emblica officinalis</i>	Immunomodulatory Adaptogenic Antioxidant Cardioprotective Neuroprotective\ Anti-cytotoxic
<i>Tinospora cordifolia</i> (Guduchi)	Hepatoprotective, Anti-inflammatory, Nutrient ,Immunomodulator activity -Immunostimulant activity (Activate Mononuclear cells to release cytokines)
Aswagandha (<i>Withania somnifera</i>)	Immunomodulatory, Adaptogenic Immunomodulator
Tulasi (<i>Ocimum sanctum</i>)	Strong antioxidant activity in vitro and anti-lipid peroxidative effect in vivo which strongly suggest free radical scavenging as a major mechanism by which <i>Ocimum</i> products protect against cellular damage and tumor induction, Anti-stress
Haridra (<i>Curcuma longa</i>)	Anti-inflammatory, antibacterial, stimulant, tonic
Lasuna (<i>Allium sativum</i>)	anti-inflammatory, anti-oxidant, free radicals scavenger, has hypoglycemic and hypocholestermic effect
Punarnava (<i>Boerhaavia diffusa</i>)	anti-inflammatory, antioxidant
Katuki (<i>Picrorhiza kurroa</i>)	Hepatoprotective, antioxidant, adaptogenic
Bhallataka (<i>Semicarpus anacardium</i>)	It showed anti-inflammatory property against carrageenin, 5-HT and formaldehyde induced rat paw oedema (acute anti-inflammatory studies)

Efforts are being made to develop nutraceuticals based on leads from Ayurveda and certain scientific studies have shown that such agents have significant role in managing different stress conditions as adaptogens besides improving immune status of individuals.

Ayurveda in Geriatrics: The process of decay is becoming more in comparison to the process of repairing, which welcomes senility before its turn. In ayurvedic science vrddhavastha starts from 60-70 years¹, but in present scenario it starts prior to it. Acharyas present an interesting scheme of loss of different biological factors during lifespan as a function of ageing, During the approx 100 years of total span of life an individual loses different biological values in different decades every 10years of life in following sequence, drshti, shukra, indriya, shakti, etc²

By giving proper rasayana therapy we can slow down this activity

Rasayana approach is suitable and promising measure tackles such conditions. Plants possessing ayuskara/ayusya etc.properties (adaptogenic, antioxidant) may be effective in geriatric problems, psycho-neuroendocrine disorders, stress related conditions, psychosomatic disorders, free radical induced disorders viz. degenerative disorders of osteopathy, arthropathy, diabetes and its complications, autoimmune diseases, Cancer and so on. Panchakarma is a boon for many refractory clinical problems related to bio-oxidation, free radicals, autoimmune disorders, cancer, and immunodeficiency syndromes. While selecting the drug/food intervention the specific effect of the selected intervention is to be taken into consideration to achieve desired effects. Ayurvedic nutritional approach and various interventions for prevention of sequential loss of some biological qualities in aging are described in table 14.

Decades	Age	Desired effect	Suggested interventions for prevention of sequential loss of some biological qualities
First	0-10	Balya	Vaca Kasmari
Second	11-20	Vridhhi	Ashvagandha Bala
Third	21-30	Chhavi	Amalaki
Fourth	31-40	Medha	Shankhpusphi Jyotishmati
Fifth	41-50	Twacha	Bhringaraja
Sixth	51-60	Drsti	Chakushya Triphala Ghrita
Seventh	61-70	Shukra	Atmagupta Ashvagandha
Eighth	71-80	Vikrama (Physical endurance)	Comprehensive rasayana interventions to improve physical and mental health
Ninth	81-90	Buddhi(Mental health & Wisdom)	
Tenth	91-100	Karmendriya	

Garbha Samskara in Ayurveda:

Matru Swasthyam Loka Swasthyam” as the saying a goes only if the mother is healthy will she be able to give birth to a healthy baby. Ayurveda specializes in providing maternal health with utmost care and vigilance by advising:

- **Garbha sthapana** – A unique Ayurvedic therapy through nasal route advocated in the 1 st trimester of pregnancy during Pushyanakshatra days. This ensures stability of the embryo which in turn yields a healthy foetus. Also prevents Recurrent Abortions by rendering strength to the Uterus
- **Garbhini Paricharya:** Masanumasika – monthwise care is provided with Aushadha (medicine), Ahara (diet /nutrition), yoga and pranayama, with music therapy to have easy and uncomplicated delivery along with contemporary Ante Natal Care (ANC).
- **Hombale prayoga:** A specially prepared medicated drink “Hombale prayoga” is administered to the pregnant women at the hospital premises. This special multi ingredient nutritive formulation is a traditional recipe to sustain the developing foetus and improve the general immunity and wellness of the mother. It is administered on every pushyanakshatra.
- **Prasava paricharya:** Specialised treatments which facilitate normal vaginal delivery, start well before the process of onset of labour during the 9 th month of pregnancy Therapies such as, Basti, Lepa, Abhyanga etc are advised during pregnancy, to ease the process of vaginal delivery, enhance the pain threshold of the parturient and prevent complications during labour which may ultimately resort to assisted labour and Caesarian section.

- **Sutika Paricharya:** Series of regime, postdelivery includes Pathyahaara, Vyayama, Abhyanga, Sootika snana, Dhoopana, Pattabandhana etc. for achieving Vata shamana, which invariably helps in involution of uterus and improvement of Lactation and thus a healthy transformation to the Pre-Pregnant state.

- **Breast feeding awareness:** Invoking awareness among young mothers with the concept of “Breast feeding – the Best feeding!” Encouraging expectant mothers and young mothersto exclusively breast feed the baby during initial six months of infant life and continue breastfeeding till completion of 1 year. The process of selecting and transmitting positive influences to the foetus by means of yoga, reading good scriptures, positive thinking, praying, healthy, eating and cheerful behaviour is known as Garbha samskara. Garbha samskara is nothing but a natural extension of the concept of Achara rasayana.

Ayurveda in Textiles: Ayurvastra³ which is the cloth made from organic cotton fabric that has been specially treated with medicinal herbs to impart not only medicinal properties but also beautiful hues to the textiles. Its production does not add up to environment pollution. It is now being used extensively for treatment of wide range of diseases such as diabetes, skin infections like eczema, body acne, hypertension, asthma, arthritis, rheumatism, etc.

With people becoming more health conscious all over the world, ‘Ayurvastra’ fabrics have great scope in times to come. Ayurvastra not only reinforces the importance of sustaining the planet for future generations but also considers the wellbeing of current generations using age old practices.

Ayurveda can play effective role in revival and elevation of the market for eco-friendly fabrics. Thus, it may be taken as emerging or new area of entrepreneurship and job opportunity for young people at one hand and on the other contribute towards offering economic stability to the nation.

Ayurveda and Aviation:

Despite the unique occupational environment, the health consequences of flight attendant work have not been intensively studied.

Flight attendants are continuously exposed to a range of job-related exposures such as poor cabin air quality, cosmic ionizing radiation, elevated ozone levels, pesticides from cabin disinfection, high levels of occupational noise, circadian rhythm disruption, heavy physical job demands, and verbal and sexual harassment.

The flight attendant is the only person on an aircraft who is engaged in intense physical activity at reduced oxygen levels. Hence their health hazards may differ significantly from those of pilots and passengers

The most recent and reliable information about the health risks of being a flight attendant comes from the Harvard Flight Attendant Health Study (FAHS)

Prolonged exposure to dry air is reported to cause symptoms of local irritation such as nasal stuffiness, sore eyes, nose, throat, and chest wheeziness, or symptoms such as headache, fatigue, and difficulty in concentration.

Flight attendants are at risk for musculoskeletal disorders.

Work-related strains and sprains of muscles, tendons, and supporting tissues can be caused by lifting, bending, carrying, reaching, working in confined spaces, and using repetitive motions.

Turbulence or sudden airplane movements are a frequent cause of injury among flight attendants.

Lower-back musculoskeletal disorders are among the musculoskeletal problems most commonly reported by flight attendants.

Musculoskeletal symptoms may be associated with work-related psychological factors among flight crew, including mental job demands, harassment, and job insecurity.

There are numerous factors which affect the health of the people of this occupation, here is where Ayurveda can be of rescue! Various treatment modalities can be thus inculcated for the flight attendants as a preliminary preventive step before the haul as well as after a very tiresome long hauls.

Therapies like Abyanga, Pada abhyanga, lepa, kati basti, greeva basti etc, can be administered in the view to tackle the Musculoskeletal issues, also sessions of Pranayama as well as various yoga postures can aid in bringing down the stress levels down and in addition improve the respiratory health of the attendant which is of utmost need on higher altitudes.

The implication of Rasayana will also help in adding up the immunity to fight against various cosmic rays to which they are frequently exposed to.

Ayurveda in armed forces:

The acceptance and popularity of Ayurveda treatment among the military personals has been gradually increased in consecutive three years. The diseases among the military patients that preferred for Ayurveda treatment were musculo-skeletal diseases, amlapitta, anorectal diseases and mental diseases.

From a study documented, approx 82.96% of attended military personals were very satisfied with the ayurvedic treatment especially in musculo-skeletal disorder where modern medicine has surgery as treatment of choice.

In addition, worldwide acceptance of yoga in a way to manage stress and integrating yoga into the jawans lives can help them improve their quality of living and manage their mental health.

The policy maker should introduce Ayurveda in all military hospitals. Looking the demand it recommended that the military doctors should refer the patient to government Ayurveda hospital for Ayurveda treatment and the expenses incurred for the ayurveda treatment should reimburse.

DRDO should appoint Ayurveda doctor for more comprehensive research and clinical trial. Ayurveda doctor should be recruited in Indian military and paramilitary forces.

Ayurveda in sports: Even sport medicine is new branch developed, still Ayurveda has all solution related to sport science. Ayurvedic medicines have potent action in acute & chronic injuries. Use of external application and internal medication found to be best in the healing of injuries and prevent edema, stiffness, muscle wasting compared to modern treatment. Early mobilization and proprioception is the great advantage of Ayurvedic combination therapy compared to modern treatment plays a key role in Rehabilitation in sports.

Ayurveda can creates miracles in various kinds injuries like tennis elbow, heel pain, heal spur, Achilles tendinitis, tenosynovitis, groin injury, long lasting patellar tendinitis, supra spinatus tendinitis

with shorter duration of time compared to modern medicine.

Many surgical conditions like meniscal tear, rotator cuff tear, ligament tear, condylar fracture. Patellar dislocation, recurrent shoulder dislocation, back pain and neck pain due to inter vertebral disc disease can be treated and recovered in shorter span of time by integrated method. Degenerative diseases like osteoarthritis, per arthritis affecting the old age can be successful brought back to normal stage and patient can move without pain safely in low treatment cost. Performance enhancement and attaining physical and mental fitness all this can achieve with Ayurveda in sports medicine.

Apart from all above, by Implication of Rasayana an individual will get longevity, good memory power, intelligence, health, youth, lustre, and complexion, and good voice, stronger sensory and motor organ. Abha like Rasayanadravya acts on Asthivahasrotas brings about vitality in all the actions, also will aid in keeping his sensory and motor organs strong enough. Vacha, Raupyabhasma etc are Rasayanadravyas which act on Majjavahasrotas helps the individual to be focussed and bring critical thinking in the skillful sports like Chess, carom, Archery etc.

Ayurveda in Cosmetics: The market for ayurvedic beauty products is growing fast. Many companies have entered the segment with branded products in categories such as skin care, hair care, soaps & essential oils.

Concern about harmful chemicals in beauty products has increased consumer interest in natural cosmetics has parallely increased. India could emerge as a major contributor to the global cosmetic industry. This is one of the strengths of India with its Ayurvedic tradition.

DISCUSSION: In the modern world the strengths and limitations of modern medicine are becoming even more evident. Availability and accessibility to even primary healthcare still continues to be a serious issue. Emerging and reemerging diseases pose ever new challenges. Studies of public health-seeking behavior indicate increased preference for traditional medicine. However, because environmental changes and deforestation are threatening and endangering many species, associated quality and safety issues are affecting the global herbal drug market. In such a situation, we need rigorous research on Ayurveda especially in the areas of Dravyagunavigyan, Bhaishajya kalpana, and Rasashastra. We need to assess the most recent Ayurvedic drugs and dosage forms, which will be most relevant and acceptable

today for better, safer, and affordable treatments. In a globalized knowledge society like today's, we cannot continue to take a conservative line limiting Ayurveda to 57 books given in some schedule. We need a new generation of Charaka, Vagbhata, and Nagarjuna. We need second Himalayan conference to rediscover Ayurveda and evolve integrative health care models for the future. Thus the call for renaissance of Ayurveda really is not limited to India but indeed is in the interest of the global healthcare.

CONCLUSION:

Traditional medicine is a key pillar of health care delivery systems and plays a crucial role in maintaining good health and well-being not only in India but across the world. In recent year, traditional medicine therapies have also seen a major transformation as usage of artificial intelligence, technological innovations have made it more accessible to masses. Ministry of Ayush and the World Health Organization (WHO) is establishing world's first and only Global Centre for Traditional Medicine (WHO GCTM) in Jamnagar, Gujarat. GCTM will aim to integrate the benefits of traditional medicine with the achievements of modern science and create a comprehensive health strategy.

By advent of this initiation been taken by the Government of India, Ayurveda like traditional system of medicine needs to grow in every aspect to bring about the best to serve the Humanity.

However, much needs to be done for this bold move to be properly realized. We need to visualize a uniquely Indian model for the 21st century healthcare that demonstrate a paradigm shift from disease and treatment centric system to a new integrative system that gives equal importance to prevention and wellness along with curative care.

So critically thinking and bringing out new innovations in our science is the need of the hour.

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