

ROLE OF SALUTOGENETIC FORTESS OF AYURVEDA IN ENHANCING PUBLIC HEALTH - A REVIEW

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Article Received on
20 July 2019,

Revised on 14 August 2019,
Accepted on 02 Sept. 2019,

DOI: 10.20959/wjpr201910-15817

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ABSTRACT

With advent of technology, human being has learnt to deal with infectious diseases but the lifestyle disorders are now taking a toll on public health. Ayurveda provides a complete solution to improve lifestyle disorders in form of daily regimen, water storage practises and spiritual practises like Havana karma. The study aimed at finding evidences to substantiate the few classically mentioned facts and thus conclude how a complete module package for improving Public Health is possible by living life the Ayurveda way.

KEYWORDS: Ayurveda, *Salutogenesis*, Public Health, *Agnihotra*,

Rasayan.

INTRODUCTION

A good public health is one of the pivotal criterion for achieving prosperity and development of any nation. With the advent of science and technology, mankind has successfully won over most of the infectious diseases but now the Global Burden of Diseases has shifted from communicable to non-communicable diseases. In India alone, in the Health of the Nation's State Report, 2017, 55% of Disability Adjusted Life Year rate, are from Non-communicable diseases.^[1] The primary reason of this can be attributed to sedentary and demanding lifestyle of the population and lack of preventive health care education.

With the fundamental aim of '*Swasthasya Swasthya Rakshanam*' i.e. sustaining the health of the healthy individual, if well planned mass awareness is created about Ayurveda then it holds immense potential to prevent the non-communicable lifestyle diseases. Based on this facet, the National Health Policy 2017, has also strongly advocated mainstreaming the potential of Ayush within pluralistic system of medicine.^[1] Salutogenetic approach which

focuses on maintaining health and preventing disease condition is similar in line to aim of Ayurveda health sciences. The study is an effort to present an evidence based collection of Ayurvedic fortes which can prove to be a complete package for enrichment of public health and related policies.

MATERIALS AND METHODS

The classical texts were evaluated for *Dincharya* (Daily routine) and evidence based researches proving the same were searched in Pubmed and Google Scholar Database. They were then discussed and a conclusion was made on using them in Public Health enhancement.

RESULTS AND DISCUSSION

The term 'Salutogenesis' was coined by 'Aaron Antonovsky' from his studies on 'How people manage stress and stay well'.^[2] It is a medical approach focussing on factors that support human health and well-being rather than on factors that cause disease (pathogenesis). The approach of Ayurveda towards positive health shares its features with the concept of Salutogenesis as described by Antonovsky. Prevention strategies pragmatically suggested by Ayurveda - including factors such as promotion of health education, individual awareness, integration of spirituality and ethics in healthcare system- may be applied in public health management, in order to improve perceived and objective life quality, promote healthy aging, limit drugs use (avoiding expensive side-effects) and reduce chronic diseases social costs.^[3]

Rasayan – a very renowned theory of Ayurveda which primarily aims at tissue regeneration and cell renewal has been proven scientifically in numerous studies. *Amalaki rasayan* (AR) a rejuvenating Ayurvedic drug prepared from *Phyllanthus emblica* fruits has shown the following properties in research studies. Vikas et al evaluated the cardioprotective effect of AR, in the reversal of remodeling changes in pressure overload left ventricular cardiac hypertrophy (LVH) and age-associated cardiac dysfunction in male Wistar rats.^[4] Dwivedi et al, found that *Drosophila melanogaster*, when fed with AR and Rasa sindoor (a metallic rasayan preparation) showed increased median life span and starvation resistance. It also increased the levels of Apoptosis inhibitory proteins and decrease caspases along with levels of pro-apoptotic proteins in eye disc and salivary glands. The rasayan drugs also promoted improved stress tolerance and thus had anti-ageing effect in *Drosophila melanogaster*.^[5] Like AR there are numerous Rasayan drugs one of them being Ritu-Haritaki. *Ritu - Haritaki* is a seasonal regimen described in Bhavprakasha Nighantu

wherein *Terminalia chebula* is given with different *anupanas* (adjuvants) according to different seasons in order to yield maximum rasayan effects. Its role has been studied in the management of *Amlapitta*.^[6] By inculcating rasayan use in daily regimen through mass awareness health programs, the longevity, immunity and work-performance of the entire population can be increased.

Among the morning routine, *Agnihotra Karma* holds an important place. In the 3rd Kanda of Atharvaveda, the eleventh sukta mentions *Agnihotra* karma for protection from diseases. *Dhoopana karma* and *Havana karma* described in ancient spiritual texts are to be done during epidemics as well as day to day routine. It has been proven scientifically to have air purification effect. Pushpendra K et al performed *Agnihotra* karma under laboratory conditions.^[7] The results showed an impressive reduction of 93% in bacteria, 88% in fungi and 93% in pathogen. This effect continued till 7 days after the experiment, which showed the long lasting effect of Havana karma. Under the natural lab conditions and after creating local and artificial indoor air pollution it was noticed that Sulphur oxides, Nitrogen oxides were considerably reduced by almost 51% and 60% respectively more by yagya when compared without yagya and both RSPM (Respirable suspended particulate matter) & SPM (Suspended Particulate Matter) were also found to be reduced by 9% & 65% respectively more as compared to the condition without yagya. Mango wood which is primarily used in Havana karma was found to have almost near zero carbon monoxide emissions which explained why scriptures mentioned its primary use during *Agnihotra*. It was found that in the slow combustion taking place in the process of Yagya, small quantity of O₂ was utilised and meagre CO₂ was emitted which posed no threat to the environment. In fact whatever CO₂ was generated it was readily absorbed by the surrounding vegetation, thus strengthening the CO₂ cycle. The other important finding was that the CO₂ produced in Yagna was not always free CO₂ but it remained mixed with other aromatic oils and antiseptic products. It therefore, acted as a vehicle in transporting such products to distant surroundings. The use of CO₂ as a cerebral stimulant to assist the patients suffering from lack of ventilation is common in medical world. Dr. L. Maela Anatoninhowska of Poland conducted a study on *Agnihotra* karma using P.S.I. Technique and found that the small amounts of co₂ inhaled by the persons performing yagya acted as a stimulant and more and more aromatic fumes were inhaled which helped in curing mental disorders^[7] Particularly effective results with respect to the elimination or reduction in radiation were also achieved through Yagna's fire and ash. Thus,

Agnihotra Karma performed at mass levels can be a solution to the current extremely polluted air of India.

The Superbugs (microorganisms resistant to one or more commonly used antibiotics) are a serious growing phenomenon in current medical world. With Ayurvedic drugs being used either as single drugs or in formulation form, consists of numerous active molecules, thereby making it pretty impossible for the bacteria to get resistant to them. Rani et al conducted a screening of some plants of importance in the Ayurvedic system of traditional medicine, used in India to treat enteric diseases.^[8] Fifty four plant extracts (methanol and aqueous) were assayed for their activity against multi-drug resistant *Salmonella typhi*. Strong antibacterial activity was shown by the methanol extracts of *Aegle marmelos*, *Salmalia malabarica*, *Punica granatum*, *Myristica fragrans*, *Holarrhena antidysenterica*, *Terminalia arjuna* and *Triphala* (mixture of *Emblica officinalis*, *Terminalia chebula* and *Terminalia bellerica*). Moderate antimicrobial activity was shown by *Picorrhiza kurroa*, *Acacia catechu*, *Acacia nilotica*, *Cichorium intybus*, *Embelia ribes*, *Solanum nigrum*, *Carum copticum*, *Apium graveolens*, *Ocimum sanctum*, *Peucedanum graveolens* and *Butea monosperma*. Thus, Ayurvedic medicines provide a good substitute in treating multi-drug resistant microorganisms.

Acharya Sushruta advocates the use of copper vessels for storage of water in *Sushruta Samhita*. Sudha et al, conducted a study to see the effect of copper vessel on tap water and glass vessels as control.^[9] Tap- water was stored in auto-claved copper vessels and glass jars. Bacteria colony of - *V. cholerae*, *Salmonella enterica* Typhi, enterotoxigenic *E. coli*, *S. Paratyphi*. Enteropathogenic *E. coli*, were inoculated in both chambers and left for twenty four hours. The microbes inoculated into copper vessel water could not be recovered on the specific growth medium. In the control glass bottles, on the other hand, the number of bacteria inoculated either remained the same or slightly increased. The level of copper that had leached into the test samples was 177 ± 16 ppb which was well within the WHO limit of 2000 ppb. This proves that merely by making popular the use of copper in general masses, the diarrhoeagenic bacteria and others can be dealt with and the diseases can be prevented.

CONCLUSION

By making use of Salutogenic Aspect of Ayurveda, the masses can be made aware about the right *Ahaara* and *Vihaara*, use of *Rasayana*, all the preventive measures. Ayurveda should be integrated at PHC level, so that not only the common man will be protected from lifestyle

disorders and side effects of contemporary medication but will also develop an immunity so strong that he will be disease free for all his life. The collaborated role of the respective authorities will prove as a milestone in the direction of upliftment of Public Health.

The evidences of published scientific literature proves the authenticity of the Ayurvedic practices mentioned in classics for benefits of public health. These are cost effective and easy to use for layman, both in diet and lifestyle.

The substantiated systematic review suggests that the classical practises of Ayurveda can act as the best module package for management of both NCD's and CD's, thereby decreasing the Global Burden of Diseases. The Ayurveda science of life can easily act as a landmark in upliftment of Public health.

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