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Efficacy of Ayurveda in the Prevention of Lifestyle Diseases or Non-Communicable Diseases (NCDs)

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ABSTRACT

Lifestyle diseases occur due to an individual's everyday regimen and arise from an incorrect interaction between individuals and their environment. Bad eating habits, physical inactivity and a disrupted biological clock are primarily responsible for such diseases. In this context *Ayurveda* offers a well-organized system of conventional health care that promotes health maintenance and disease prevention via adherence to a balanced diet and vigorous lifestyle. There has been a strong connection between *Ayurveda* and Nutrition since ancient times. Interest in *Ayurveda* has grown across the globe due to its potential for managing and preventing lifestyle disorders. Acknowledged as one of the leading life sciences *Ayurveda* offers effective solution through *Panchakarma*, *Rasayana*, dietary control, lifestyle advice and rejuvenating therapies. The most effective and significant method in use is *Ashtanga Yoga*, a combination of *Yogic* and meditation exercises beneficial for regulating one's senses, focus and combating lifestyle disorders. Thus, *Ayurveda* is a holistic approach to health designed to help people live long, healthy and balanced life free from illness and diseases. This paper examines the causative factor behind certain lifestyle diseases and lays stress on their prevention through *Ayurvedic* techniques.

Key words: *Ayurveda*, Health, lifestyle, eating habits, functional foods

INTRODUCTION

Ayurveda comprises of two words- *Ayu* meaning life and *Veda* implies knowledge which deals with various aspects related to health and well-being in their distinctive approach.^[1] It is a traditional system of medicine native to India. It lays stress on the regulation of diet since it examines the whole human body as the product of food consumed within it. Thus, the primary aim of *Ayurveda* is to achieve the goal of promoting

health, preventing disease and managing it in order to lead a healthy and happy life in a society that is in dire need of it. *Ayurveda* is a renowned life science that uses individualised treatment plans and a holistic approach to health. It is recognised as a comprehensive medical system that addresses spiritual, ethical, philosophical, psychological and physical well-being of individuals.^[2] For achieving their optimum health it mainly focuses on a variety of lifestyle-related laws and regulations among which the rule of Dietetics is of utmost importance. Proper adherence to the dietetic rule can lead to improved health and help one achieve a longer lifespan.^[3] The three pillars of a healthy life as described by *Ayurveda* are *Brahmacharya* (celibacy), *Nidra* (appropriate sleep) and *Aahar* (right nutrition).^[4] *Ayurveda* lays special emphasis on an individual's diet considering it as one of the three pillars of life Diet plays a very important role (*Traya- Upastambha*) for the human body in providing energy, helping in cell and tissue growth, healing and maintenance though its requirement may differ according to a person's age, gender and profession. A diet which is balanced

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consists of several foods in the right amounts that sufficiently satiate the body's needs. Eating a balanced diet on a regular basis and maintaining a healthy weight are prerequisites for the preservation of both physical and mental well-being of people.^[5] Due to the rapid technological strides and new innovations a change is visible in all the directions which can be due to the result of population growth, climate change, pollution on the rise and various other socio-economic factors. Our flora and fauna and all the living beings are facing extreme survival stress. In this scenario it becomes our onus to shoulder the mammoth task of not only preserving human health but also maintaining the integrity of our environment.^[6] The quality of life is reaching a new low as a result of the rising trend of poor health indices across all age groups worldwide caused by unchecked pollution and the destruction of a healthy ecosystem. The population's health has a major impact on a nation's overall health and wellbeing. Lifestyle diseases have an increasing influence not just on people's personal health due to out-of-pocket expenses but also on a country's economy. In today's era, the incidence of non-communicable diseases (NCDs) or chronic diseases of lifestyle (CDL) is on an increase due to changing lifestyle of individuals leading them to develop diseases which they cannot cure due to unaffordable healthcare cost.^[7] Lifestyle disorders such as obesity, dyslipidaemia, hypertension, diabetes mellitus and hypertension are becoming more common and are linked to cardiovascular diseases. Cardiovascular diseases continue to remain the leading cause of death, accounting for almost 30 per cent of all fatalities globally.^[8] The prevalence of these illnesses has increased to frightening levels among Indians in recent years due to the country's rapid economic development and growing westernisation of lifestyle over the past few decades. *Ayurveda*, being the oldest application of medical science in human civilization is more apparently the science of life since it goes beyond the management of illness and incorporates a broad range of ideas and methods that addresses the needs of the humans.^[9] For this reason the world has become more interested in *Ayurveda* due to its potential, as it is acknowledged as the most advanced branch of life

science and offers guidance on managing and preventing lifestyle illnesses. Better solutions are offered by *Ayurveda* in the form of rejuvenation therapies, lifestyle recommendations, *Panchakarma* and appropriate food management.^[10] *Ayurveda's* offers a holistic approach to disease management and its interventions are directed towards complete physical, mental and social development. Its primary objective is to maintain a healthy individual and to prevent, eliminate or eradicate an individual's illness. It also aims to prevent diseases, cure diseases and increase longevity by enhancing the quality of life of individuals.^[11] *Swasthasya Swasthya-Rakshanam*, *Aturasya Vikarmokshanam* is central to *Ayurveda* practice which refers to preserving or preventing one's health and treating any illnesses that may arise.^[12] *Swastha*, according to *Ayurveda*, refers to the state of good health and occurs when the three body systems—*Vata*, *Pitta* and *Kapha*—as well as the appropriate operation of *Atma*, *Indriya*, and *Manas* are in balance. Sickness results when there is an imbalance between these components. *Acharya Charaka* asserts that the goal of *Ayurveda* is *Swasthasya Rakshanam* which means prevention is always better than cure.

In the light of the foregoing context, the current review study aims to examine various causative factors of certain lifestyle diseases and their prevention through *Ayurvedic* techniques.

MATERIALS AND METHODS

Relevant literature such as journals, newspapers, articles, research papers from Scopus, Pub Med, research gate and Google scholar related to various lifestyle disorders and its preventive measures through *Ayurveda* were reviewed to find out the existing gaps and to create awareness about *Ayurveda* medicine in Indian culture.

Ayurveda: the gateway to prevention of Non-Communicable Diseases (NCDs)

Ayurveda is regarded as a pioneer in life science and enlightens the way to manage lifestyle disorders which aids in preventing the risk factors of non-communicable diseases (NCDs). It includes appropriate

dietary management, daily and seasonal regimen advice, medication, detoxification and bio-purification processes and rejuvenation therapies. The traditional medical approach of *Ayurveda* holds significant potential in mitigating lifestyle diseases.^[13] *Ayurveda* offers various measures like *Ahara*, *Dinacharya*, *Ritucharya*, *Panchkarma*, *Sadvrat* and *Acharya Rasayana* for the prevention of lifestyle diseases. *Ayurveda* is making a significant contribution to human health even in the twenty-first century both in terms of meeting the community's health demands and addressing new issues as lifestyle illnesses are becoming more and more common in today's scenario. The following sections examine the causative factor behind certain lifestyle diseases and lays stress on their prevention through *Ayurvedic* techniques.

Ahara (Proper Dietary Management)

During the present era we are witnessing technological developments which are somewhere responsible for the rise of lifestyle disorders. The food habits of an individual are the origin of various diseases. *Ahara*, one of the key tenets of *Ayurveda* is a vital notion that underpins harmony, happiness and health. *Ayurveda* lists a plethora of wholesome and unwholesome diets in relation to various ailments. Improper intake of *Ahara* leads to numerous lifestyle disorders of serious nature.^[14] The *Charak Samhita* in *Ayurveda* refers to food regulations and procedures as *Ashta Ahara Vidhi Vishesh* *Yatana*.^[15] The timing of meals is one of dietetics most crucial considerations. Additionally, it also lays emphasis on consuming warm water which is beneficial for digestive health. In addition, *Ayurveda* has also identified eighteen different kinds of dietary incompatibilities (*Viruddha Ahara*) that need to be avoided in order to preserve longevity and good health.^[16] A study carried out in Jaipur with 60 participants demonstrated that *Panchakola Churna*, *Bilva* and *Pathya Ahara* (healthy eating) can provide significant alleviation from *Grahani Dosh*.^[17] Significant improvements were observed in the Irritable Bowel Syndrome (IBS) symptoms after *Ayurvedic* treatment was given to the patients and majority of the symptoms improved after finishing the

follow up medicine (*Takra Basti* and *Shamana Ousadhi's*) for one month.^[18]

Dinacharya (Daily Regimen)

In today's modern world, every person's daily schedule has become increasingly chaotic and we have become a victim of many non-communicable diseases. One of the *Ayurvedic* concepts discussed in the context of prevention of such diseases is *Dinacharya*.^[19] *Dinacharya* refers to the daily routine or tasks that each person must adhere to. *Ayurveda* proposes that it is ideal to get up every day at *Bramha Muhurta*, ideally between 4:00 to 5:30 a.m. in the morning. The summons of nature should be answered. It is recommended to use soft brushes composed of twigs from plants such as *Khadira*, *Karanja*, and *Apamarga* to clean teeth. Every day, the entire body must be massaged (*Abhyanga*) using therapeutic oil since it guarantees loose, silky skin as well as unrestricted mobility of the joints and muscles. Regular application of collyrium (*Anjana*) to the eyes is recommended.^[20] A regular exercise regimen, or *Vyayama*, is necessary for optimal health. It strengthens the body's defences against illness, opens the body's channels (*Srotas*) and improves blood flow, daily full-body massage using dry *Yawa*, *Kulath* (*Udvartan*) powders. *Nasya* must be done every day. *Nasya Dravyas* activates nerve endings, transmits a signal to the central nervous system and starts the body's regular physiological processes. Bathing (*Snana*) increases vitality, strength, hunger and lifespan while cleansing the body of perspiration and other pollutants.^[21] *Dhumapana*, one of the *Dinacharya* methods lays stress on inhaling medical smoke to purge the head and neck region of pollutants and vitiated *Kapha Dosh*. It has been found that *Prayogika Dhumapana* (herbal cigarette) prepared using *Ayurvedic* ingredients is safe for consumption on a daily basis.^[22] In a study it was indicated that a single drug *Ardraka Arka* has good broncho dilation effect as outcome of inhalation was found less than 20 minutes in reduction of symptoms and increase of PEF (Peak Expiratory Flow Rate) whereas the changes were seen after 40 minutes when *Ardraka Arka* was administered internally. *Ardraka Arka* extract through nebulizer in mild to moderate condition is of utmost benefit to the

patient, as it reduces the chest tightness along with good expectoration and a reduction the intensity of bronchi.^[23]

Ritucharya - (Ritu meaning Season and Charya meaning activities/ Behaviour)

Seasons have an immense control on what people eat and how they spend their time while exercising. Study carried out in Himachal Pradesh revealed the consequence of *Agni* (digestive strength) and *Bala* (physical strength) during *Greeshma Ritu* (summer season). The findings of the study indicated that during *Grishma Ritu* 48.8% of the respondents had normal intake of food while 35.4% of them had sometimes normal and sometimes decreased intake of meal. Additionally it was also seen that *Abhyavaharana Shakti* (food intake capacity) in the respondents was almost normal and 83.4% of respondents had *Saamanya Jarana Shakti* i.e., they were able to digest adequate quantity of meals.^[24] A significant increase in FEV1 (Forced Expiratory Volume) and FVC (Forced Vital Capacity) values of group B cases were seen as compared to cases of group A in a study. The study findings indicated the additive effect of the observance of *Ritucharya* for improvement of lung functions and better management of Bronchial Asthma.^[25] *Ayurveda* also highlights the role of *Ritucharya* in disease prevention which focuses on modifying lifestyle choices in accordance with seasonal fluctuations to increase immunity and fight against seasonal ailments. It outlines dietary adjustments, daily routines and particular actions to be performed at each season to preserve the balance of *Doshas* in our bodies. Here are some illustrations of adjusting lifestyle based on the seasons.

- The dietary changes suggested in *Hemant Ritu* (winter season) are consistent with current research, as both of them point the need for frequent or large meals during this season of high basal metabolism rate and frequent hunger pangs.
- Similarly, merely napping during the *Grishma Ritu* (summer season) aids in balancing the *Vata Dasha* and maintaining the body's structure.

- Simple body scrubbing in *Varsha Ritu* (rain season) helps to get rid of numerous topical illnesses.^[26]

Sadvratra and Acharya Rasayana

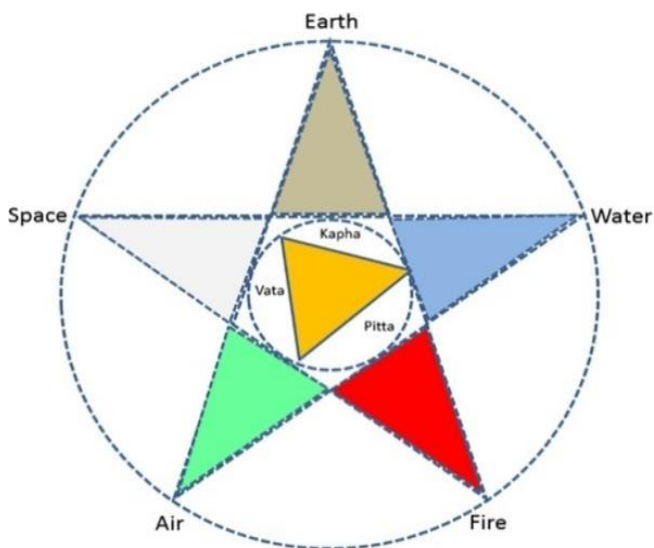
Ayurveda has outlined a set of moral principles that can shield us against a variety of illnesses. The practices of *Sadvratra* and *Acharya Rasayana* can be divided into three categories: Psychological and emotional, social and personal. The psychological and emotional category teaches us to be patient, avoiding too much attachment with others and trying not to memorise anything that offends you. The social category emphasizes keeping mercy on others, telling the truth, avoiding alcoholism, being soft hearted, always using clean and washed clothes), and personal category highlights early sleeping and waking up, avoiding excess exertion, avoiding suppression of natural urges, regime of bathing, keeping skin clean). This kind of lifestyle modification is usually beneficial for managing and preventing a variety of lifestyle problems.^[27]

Panchakarma

Everything in the universe is composed of the five basic elements (*Panchamahabhutas*) *Prithvi* (earth), *Apa* (water), *Tejas* (fire), *Vayu* (air), and *Akash* (ether). The same implies for our bodies and food too. *Panchakarma* is a rejuvenating and cleansing programme for the body, mind, and consciousness. *Ayurvedic* literature asserts that each human body comprises of the five primary components i.e. ether, air, fire, water, and earth. Each person has a different balance of the three *Doshas* (*Tridosha*) that result from the combination of these elements: *Pitta*, *Kapha*, and *Vata*. In a state known as *Pakriti*, all *Doshas* are in harmony. When there is an imbalance in this state, a sickness begins to manifest.

It was seen in a study done in Maharashtra that among the 25 participants, those performing *Tridoshaja Prakriti* were more in number as compared to *Dwidoshaja Prakriti*. Apart from *Prakriti*, it was also observed that individuals who do not have all the *Doshas* in balance, experience few clinical symptoms in common such as lumbago, menstrual irregularities, digestive disorders and constipation.^[28] A study indicates significant relationship between *Vata*

Prakriti, *Pitta Prakriti*, *Kapha Prakriti*, *Vata-Pitta Prakriti*, *Vata-Kapha Prakriti*, and *Pitta-Kapha Prakriti* and Body mass index (BMI). BMI was highest in *Kapha Prakriti* (25.35) than all other *Prakriti*. It was followed by *Pitta-Kapha Prakriti* (24.76), *Pitta Prakriti* (23.92), *Vata Prakriti* (23.68) and *Vata-Kapha Prakriti* (23.25) respectively.^[29]



Source - Frontiers^[30]

Yoga

Yoga, which has been practiced for thousands of years in India, can be very beneficial in both preventing and managing non-communicable diseases. *Yoga* is not just a physical practice but also a comprehensive way of life that is constantly at the forefront in the fight against NCDs and other illnesses. Physical, moral, social, mental, and spiritual well-being is all embraced by the atomistic science of *Yoga*. Gentle exercise, breath control and meditation are all incorporated into *Yoga*. By boosting blood and oxygen flow, *Yoga* helps the body's internal organs continue to operate as intended. Major disorders of the heart, lungs, kidneys and other essential organs are less common when all of the vital organs receive enough oxygen and blood.^[31] Performing *Yoga* on daily basis leads to better sleep, less stress and enhanced cognitive performance.^[32] *Yoga* therapy program on patients suffering from Parkinson's disease indicated significant reduction in ($p < 0.05$) in systolic and diastolic blood pressure, respiratory rate and significant improvement was seen in their breath holding time.^[33]

Regular *Yoga* practice improves serum levels of nitric oxide, F_2 -isoprostane. Lipid peroxide plasma and levels of adrenalin ($p < 0.05$) were significantly decreased by *yoga* practice ($p < 0.05$ or $p = 0.01$), whereas serum total glutathione (GSH) contents, activities of GSH-peroxidase, and GSH-s-transferase were remarkably increased after *yoga* practice compared with the control group ($p < 0.05$ or $p = 0.01$). *Yoga* practice also significantly increased immune-related cytokines, such as interleukin-12, and interferon- γ , in serum ($p < 0.05$ or $p = 0.01$)^[34].

CONCLUSION

Modern humans lead a lifestyle that has disrupted many aspects of their biological systems. Due to this, majority of the people in the world suffer from various lifestyle disorders, for which *Ayurveda* is the only treatment that can benefit humanity. *Ayurveda* mainly focuses on longevity, which is defined as the natural last experience of the life cycle. It also includes all the circumstances necessary to live in health and vitality in order to achieve a healthy death. Thus, for keeping oneself healthy it is imperative to adopt effective and safe solution in the form of proper dietary management, lifestyle advises *panchakarma* (bio purification procedures) and rejuvenation therapy to prevent life-style disorders.

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