



Dinacharya (Daily regimen): A Syndromic Approach to Prevention of Non Communicable Diseases

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Abstract:

Purpose

Dinacharya which consists of group of measures for prevention of various diseases as a syndromic approach is a unique concept of Ayurveda where a single measure like exercise is able to prevent multiple diseases such as diabetes mellitus, obesity, and coronary artery disease and so on. No such concept appears to be present in contemporary medical practices although a lot of importance has been given to dietary regulations and exercise in prevention and management of non communicable diseases such as ischemic heart disease and diabetes mellitus. The present study had been undertaken to collect modern scientific evidences in support of *Dinacharya* (daily regimen) mentioned in ancient Ayurvedic texts and its role in preventing non communicable diseases.

Methods

Details of *Dinacharya* available in Ayurvedic classical texts were examined and related modern knowledge on the subject was explored in various books and internet search engines like PubMed. The information gathered from both the streams were correlated and critically analyzed.

Discussion

Dinacharya includes dietary and lifestyle measures to be followed per day for a healthy and disease free life. In Ayurveda, special attention has been given on time of awakening, exercise, massage, regular bath and healthy lifestyle related advices along with *Sadvritta* i.e. beneficial social and behavioral practices. It is a collection of natural lifestyle in accordance with circadian rhythm. The analysis of knowledge obtained from ancient as well as modern books and internet provided a strong support to different steps of *Dinacharya*. Its various components not only help in preserving and promoting physical and mental health but also help in social and spiritual well being thereby preventing the person from various diseases for example regular exercise prevents from obesity and diabetes mellitus.

Conclusion

Dinacharya (daily regimen) developed by ancient Ayurvedic scientists is a method of primordial prevention and also an adjuvant to primary and secondary prevention of non communicable diseases.

Keywords: Daily Regimen, on communicable diseases, *Dinacharya*

1. INTRODUCTION

Dosha (functional constituents ie *Vata, Pitta, Kapha*), *Dhatu* (structural constituents ie *Rasa, Rakta, Mamsa, Meda, Asthti, Majja and Shukra*) and *Mala* (excretory products ie *Mutra, Purisha and Sweda*) are principle constituents of the body. Balance or imbalance of these constituents is responsible for health or disease respectively. Deviation of body constituents from their normal levels due to various causative factors leads diseases and the treatment aims at achieving natural values of body constituents by using *Ahar* (diet), *Vihar* (life style) and *Aushadh* (Medicine).¹ Variations occur in levels of *Doshas* in relation to age, day, night, and food intake.² Seasons also affect *Doshas*.³ In order to normalize diurnal variations, *Dinacharya* (daily regimen) has been advocated while *Rituchatya* (seasonal regimen) helps to combat seasonal effects. *Dinacharya* consists of dietary and lifestyle measures to be followed per day for a healthy and disease free life.

Non communicable diseases (NCDs), also known as chronic diseases, result from a combination of genetic, physiological, environmental and behaviors factors and usually tend to be of long duration.⁴. Advances in medical science has been capable of preventing communicable diseases but the changes in lifestyle and dietary habits has lead to the danger of epidemic of non communicable diseases. Modern medicine alone has been unable to prevent them .So the World is looking towards the alternatives. Recent researches have supported the effective role of *Ayurveda* in these diseases.

Non –communicable diseases (NCDs) consist of cardiovascular, renal, nervous and mental diseases, musculoskeletal conditions such as arthritis, chronic non –specific respiratory diseases (eg COPD, asthma), blindness, cancer, diabetes , obesity and various degenerative diseases.⁵ .About 41 million people each year, equivalent to 71% of all deaths globally are killed by NCDs. Each year, 15 million people die from a NCD between the ages of 30 and 69 years; over 85% of which are from low- and middle-income countries. Cardiovascular diseases are cause of the most NCD deaths, or 17.9 million people annually, followed by cancers (9.0 million), respiratory diseases (3.9million), and diabetes (1.6 million). In fact, these 4 groups of diseases cause over 80% of all premature NCD deaths. ⁶Out of the 57 million global death in 2008 , it is found that 36 million or 63 percent were due to NCDs.47.9 percent deaths were due to cardiovascular diseases, 21 percent due to cancer,11.72 due to chronic respiratory diseases,6.1 percent due to digestive diseases,3.5 percent diabetes and 9.78 percent due to other NCDs. Death due to NCDs is estimated to rise to 52 million by 2030.⁷ The common Non –communicable disease risk factors are cigarette smoking, alcohol abuse, inability to obtain preventive health services, life style changes, environmental risk factors and stress . NCDs are multifactorial in causation so their prevention demands a complex mix of interventions. As risk factors are being identified, health promotion activities aimed at primary prevention are being applied to control NCDs.⁸ Detection, screening and treatment of NCDs, as well as palliative care, are key components of the response to NCDs.⁹

Importance of lifestyle in maintenance of health and generation of diseases is well recognized in *Ayurveda*. Role of chemical agents in managing diseases is only a partial attempt towards the maintenance of homeostasis in the body. *Dinacharya* is a unique concept of *Ayurveda* which consists of group of measures directed towards prevention of various diseases as a syndromic approach.

Objectives

1. To study *Dinacharya* in *Ayurveda*.
2. . To study *Dinacharya* in the light of modern knowledge on the subject and its role in non communicable disease.

2. MATERIALS AND METHODS

Details of *Dinacharya* available in *Ayurvedic* classical texts were examined and related modern knowledge on the subject was explored in various books and internet search engines like Google, Google Scholar, PubMed .The term 'Dinacharya ' was searched in Google and pub med which revealed about 152 related articles and only five were relevant to the topic. The information gathered from both the streams and internet were carefully examined, correlated and critically analyzed.

Concept of Dinacharya –as per Ayurvedic Classical texts

Dinacharya is a unique concept of *Ayurveda* which consists of group of Daily Life’ routine instructions which if followed as life style shall prevent life style related ailments and it corresponds to the daily routine activities that every person needs to carryout in order to maintain a good and healthy life. *Dinacharya* may be considered as a syndromic approach to prevention as well as treatment of various diseases especially lifestyle and chronic diseases. All the activities of living being in the World start with arise of Sun and completed with Sun set .So maintaining daily activities with the beginning of the day and gradually going to the rest at the end of the day is definitely in accordance with the nature .

Different activities included in *Dinacharya* as available in different classical texts are mentioned in Table No. 1.

Table1. *Dinacharya (Daily Regimen)* ^{10,11,12}

S.No.	<i>Dinacharya</i> Steps	Description
1.	Arising in <i>Brahma Muhurta</i>	First step is awakening in the early hours of the day. <i>Brahma Muhurta</i> is the fourteenth Muhurta of night .It is appropriate for awakening.Due to variation in the time of Sun rise ,the time of <i>Brahma Muhurta</i> varies from region to

		region .It is about two Muhurta (ie 96 minutes or 1.5 hours) before Sun rise
2.	<i>Usha Jalapana</i>	Drinking water in the morning
3.	<i>Sharirachinta</i>	To think about the body
4.	<i>Malatyaga</i>	Excretory procedures
5.	<i>Mukha prakshalan</i>	Mouth wash
6.	<i>Dantadhavana</i>	Cleaning Teeth
7.	<i>Jihvanirlekhanavidhi</i>	Tongue Cleaning
8.	<i>Anjana</i>	Medicines applied in eyes
9.	<i>Pratimarsha Nasya</i>	Putting oil/medicated in nostrils
10.	<i>Gandusha and Kavala</i>	Gargling with oil and medicated decoctions
11.	<i>Tambulasevana</i>	Chewing betel leaves along with other herbal drugs
12.	<i>Dhoomapana</i>	Medicated smoke or fume inhalation
13.	<i>Abhyanga</i>	Massage
14.	<i>Udvartana</i>	A variety of massage with dry medicinal powders
15.	<i>Utsadana</i>	A specific massage with herbs and oil
16.	<i>Vyayama</i>	Physical Exercise
17.	<i>Chankramana</i>	Minimum exercise causing no discomfort to body.It increases lifespan,strength,intelligence,digestive power and perceptive power of sense organs.
18.	<i>Snana</i>	Bath
19.	<i>Anulepana</i>	Applying powder of Santalam album and other herbs after bath
20.	<i>Vastra dharana</i>	Clothing
21.	<i>Danda dharana</i>	Keeping stick while walking outdoor
22.	<i>Padatra dharana</i>	Wearing shoes etc
23.	<i>Chatra dharana</i>	Using umbrella
24.	<i>Ushnisha dharana</i>	Covering head with cloth specifically
25.	<i>Ratnabharana dharana</i>	Wearing ornaments
26.	<i>Madhyahna charya</i>	Afternoon regimen
27.	<i>Sandhya charya</i>	Evening regimen
28.	<i>Rathri bhojana vidhi</i>	Method of taking dinner
29.	<i>Shayanavidhi</i>	Sleeping method

Non Communicable diseases and Lifestyle

Lifestyle has important role in causation and prevention of Non communicable diseases (NCDs). These diseases have multiple causative factors which rarely have one to one causative effect. Many causative factors have associative effect and their presence does not necessarily cause the disease. Besides these, non –communicable diseases (NCDs) also have gradual onset, long natural history, and require prolonged treatment along with multi disciplinary approach in prevention and control. All NCDs have some common risk factors which can be categorized as modifiable and non modifiable. Modifiable risk factors are smoking, alcohol, high blood pressure, overweight/obesity, insufficient physical activity, Low intake of fruits and vegetables and alcohol .Non-modifiable risk factors are age, sex, genetic susceptibility and family history. ¹³

NCDs are prevalent in the people of all age groups, regions and countries. 15 million of all deaths due to NCDs occur between the ages of 30 and 69 years. and over 85% of these deaths are estimated to occur in low- and middle-income countries. Various researches have shown that tobacco use, physical inactivity, unhealthy diet and the harmful use of alcohol, all increase the risk of NCDs. Tobacco accounts for over 7.2 million deaths every year . Excess salt/sodium Intake leads to 4.1 million annual deaths .More than half of the 3.3 million annual deaths occurring due to alcohol use are from NCDs, including cancer while insufficient physical activity leads to 1.6 million deaths annually .There are four metabolic changes ie increased blood pressure ,overweight/obesity ,hyperglycemia and hyperlipidemia that increase the risk of NCDs.

In order to reduce the harmful effects of NCDs on individuals and society, a comprehensive approach is required from all sectors, including health, finance, transport, education, agriculture, planning and

others, to collaborate to reduce the risks associated with NCDs, and promote interventions to prevent and control them.¹⁴

It is being recognized that non communicable diseases can be prevented and managed by an integrated approach targeting the multiple risk factors like changing lifestyle to include sufficient physical activity can reduce the multiple diseases like Diabetes mellitus ,obesity, hypertension, coronary heart disease and so on.

3. DISCUSSION

Nija (Endogenous), *Agantuja* (Exogenous) and *Manas* (mental) are the three types of diseases described in Ayurveda. Imbalance of *Doshas* contribute to endogenous diseases and exogenous diseases are caused by external factors such as *Visha* (poison), *Vayu* (air), *Agni* (fire), *Samprahar* (trauma) etc. while *Manas* (mental) illness results from failure to obtain favorable substances and obtaining substances which are unfavorable. Non communicable diseases can be included in *Nija* (Endogenous) while communicable diseases are considered under *Agantuja* (Exogenous).¹⁵

For emergence of diseases etiological factors are essential and the best way of their prevention is removal or avoidance of etiological factors. Non communicable diseases have multiple risk factors. *Dinacharya* is a unique concept of *Ayurveda* which consists of group of measures directed towards prevention of various diseases as a syndromic approach by avoiding multiple risk factors in a routine practice and it may be considered as a primordial preventive measure especially for non communicable diseases. *Dinacharya* includes various beneficial measures related to diet and lifestyle which needs to be followed day to day beginning from the day till the person goes to sleep.¹⁶ Although all the components described under *Dinacharya* are related to the maintenance of health and management of diseased but some components like arising in *Brahmamurta* (about one and half hour before sun rise), *Abhyanga* (massage), *Vyayama* (exercise), *Snana* (Bathing), *Ahara* (diet), *Nidra* (sleep) and *Sadvritta* (beneficial social and behavioral practices) are highly relevant in prevention and management of NCDs. ¹⁷Arising in Brahma Muhurta and going to sleep at appropriate time in the night helps to maintain body processes in synchronization with circadian rhythm. Circadian rhythms are variations in physiology and behavior with a cycle length close to 24 hours even in the absence of periodic environmental stimuli. Circadian system must be reset on a daily basis in order to remain in synchrony with external environmental time. This process of entrainment is achieved through regular exposure to light and darkness. Thus ,maintaining routine activities i.e. *Dinacharya* is an important measure for maintaining health.¹⁸

The timing of the most of the biological processes in the body are regulated by a master clock in the brain. Regional clocks have also been reported in the liver, pancreas and other parts of the. Routinely eating or sleeping at the wrong times may throw these peripheral clocks out of sync with the master clock in the brain. These chronobiological disruptions predispose individuals to the development of obesity, diabetes, depression and other disorders. Resynchronizing the body's many clocks may, in the coming years, help to restore health and proper functioning. This fact strongly supports the ancient *Ayurvedic* view of arising in the *Brahma Muhurta* and sleeping at appropriate time in the night regularly.¹⁹

In *Ayurveda*, *Abhyangha* (massage) has been described to delay aging ,cure tiredness and Vata disorders and produces good sleep and lustrous skin.²⁰ In massage therapy there is physical manipulation of muscle and lumbar tissue at the site of injury, stiffness, or soreness for the purpose of reducing pain and promoting recovery.²¹ Massage can stimulate parasympathetic activity by reducing heart rate and blood pressure , increasing relaxation substances such as endorphins and increasing cardiac parasympathetic activity and improving measures of relaxation .²²

Vyayama (exercise) provide stability, increases work ability and endurance ,alleviates *Kapha* and increases *Agni* (digestive power).²³ Maintaining fitness by using judicious regimens of exercise and weight control, have the additional benefit of prolonged life. Especially between the ages of 50 and 70, mortality have been found to be three times less in the most fit people than in the least fit. It is due to reduced cardiovascular disease resulting from maintenance of lower blood pressure and reduced blood cholesterol and low-density lipoprotein along with increased high-density lipoprotein. ²⁴ Food taken in

suitable quantity prolongs life and does not aggravate Doshas and it is easily digested.²⁵ Modern medical science also advocates the intake of in proper quantity as well as having a balanced amount of various components.

Happiness, misery, emaciation, strength, sterility, knowledge etc dependent on proper sleep.²⁶ Sleep is a naturally occurring state in which, most of the body's systems are in an anabolic state and help to restore the immune, nervous, skeletal, and muscular system. It plays a large role in the function of the endocrine and immune systems. The internal circadian clock regulates sleep by promoting it daily at night.²⁷

4. CONCLUSION

Dinacharya (daily regimen) developed by ancient *Ayurvedic* scientists is a method of primordial prevention and also an adjuvant to primary and secondary prevention of non-communicable diseases. *Ayurveda* is a holistic system of health care which primarily focuses on prevention of diseases and promotion of health. The endogenous and exogenous imbalances are responsible for the causation of diseases. *Ayurveda* provides primordial, primary, secondary as well as tertiary measures for prevention of various diseases in the form of *Swasthavritta* which includes collection of different routines of the daily life such as *Dinacharya* (day regime), *Ratricharya* (night regime), *Ritucharya* (seasonal regime), *Sadvritta* (good Conduct), *Acharya Rasayana* (promotive ethical practices) along with detailed treatment methods for the diseases. *Ayurvedic* methods of prevention especially *Dinacharya* is useful in primordial prevention of chronic and lifestyle-related diseases.

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