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Review Article

Role of yoga in prevention of obesity (*Sthaulyata*) a lifestyle disease

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ABSTRACT

Background: Srotas are the internal transport system of the body which provides assistance for the activities of significant biofactors like tridosha, seven dhatu, the oja etc. Acharya Charak described 13 srotas and Acharya Shushruta described 11 pair of Srotas. Medovahasrotas is mentioned of meda to the destination tissue i.e., the channel which supply nutrition to medodhatu is known as medovaha srotas. Each srotas have their own places of origin known as moolasthan. *Vrikka*, *Katti*, and *Vapvahan* are the moolasthan of medovaha srotas mentioned in ayurvedic literatures. Medovaha srotas is vitiated by different Ahara, Vihar like *Atibhojana*, *Adhyasana*, *Ayayama*, *Diwaswapna* etc these factors cause medo dushti resulting in medovridhi/sthauyata. WHO defined obesity as a common chronic disorder of excessive body fat. India ranks among top 10 obese nations. Obesity is caused from lack of physical activity with increased intake of food. The sedentary habits, lack of exercise and various varieties among daily diet. eg., fast food, frozen food, increase amount of soft drinks canned food results in obesity. Yoga is an essential spiritual discipline based on an extremely subtle science which focuses on bringing harmony between body and mind. It plays an important role in management of obesity and for effective prevention of progression complication.

Aim: The world is looking towards drugless therapies like Yoga and Naturopathy. Both are rapidly growing as the best alternative treatments. Sushruta has also mentioned the drugless therapy and quotes that the diseases may be cured by following proper diet and lifestyle without any medicine. But in the absence of proper diet and lifestyle, even after giving hundreds of medicines, the disease cannot be cured. An attempt to evaluate the utility of Yoga in the management of overweight and obesity has been made through this study.

Materials and Methods: The present study is a conceptual study done in P.G. department of Kriya Sharir, State Ayurvedic college and Hospital, Lucknow

Results: Life style modification involves altering long term habits, typically for eating or physical activity and maintaining the new behaviour. Yoga and life style modification can be used to treat a range of diseases including obesity. Some Yoga and Asanas which are very helpful in reducing weight in obese persons are Trikonasana, Pawanmuktasana, Sarvangasana, Dhanurasana etc.

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1. Introduction

The meaning of the term ayurveda can be translated as science/wisdom of life. The main purpose of Ayurveda is to protect the health of a healthy person and treating the causative factors of a disease. Dosha, dhatu, and mala are the three basic

constituents of the body.¹ In a healthy condition they maintain and nourish the body thus lead to the state of equilibrium. If there is an imbalance created between these factors they get vitiated and leads to a diseased state. In Ayurveda, dhatus are said to be the fundamental base of the body. Dhatus support the basic structure and function of the body. Dhatus are of 7 in number which are rasa, rakta, mamsa, meda, asthi, majja and shukra. These are the structures that make

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up the body.

Meda is the fourth dhatu among seven dhatus. The dhatu which is next to to Mamsa dhatu and before the Asthi dhatu is Meda dhatu. Meda dhatu is considered to be a fatty tissue of the body as per the descriptions of the Samhitas but it cover the other component also. Fatty tissue is one of the component of Meda dhatu.²

1.1. Srotas

Ayurveda has accepted that the human body is made up of innumerable channels which are responsible for performing all the physiological and functional activities called srotas. These srotas are the channels which circulate dosha, dhatu and mala and other elements to various parts of the body for the proper development of the human body.³ The proper functioning of these channels is very necessary for a person to be healthy and blockage in these channels leads to disease. In spite of existence of numerous srotas, Acharya Charak has stated that there are thirteen srotas⁴ while Acharya Sushrut has described 11 pairs of srotas.

1.2. Medovaha srotas

Medovaha srotas are the channels which are responsible for digestion, assimilation & transportation of meda dhatu in different forms. Acharya Charak has mentioned *Vrikka* & *Vapavahan* as the moola of medovaha srotas. Acharya Sushrut has mentioned *Vrikka* & *Kati* as moola of medovaha srotas.⁵ Acharya Vagbhatt has mentioned *Vrikka* & *Mamsa* as moola of medovaha srotas. Acharya Charak stated that medovaha srotodushti leads to the symptoms of *asthanindita purusha* like *atisthula* (obesity). Ayurveda has included *atisthula* (overweight or obese) person in *Asthanindita Purusha*.^{6,7} *Sthaulya* is *Medo* and *Mamsa vikara* and *Pradhana Santarpanjanya Vikara*.

1.3. Life style disorders

Life style disease can be defined as disease associated with one's life style. These diseases are non communicable diseases. They are caused by lack of physical activity, unhealthy diet, alcohol and smoking tobacco which can lead to heart diseases, stroke, obesity, Type 2 DM, lung cancer etc.

1.4. Obesity

Obesity is basically life style disorder which is characterized by overweight due to excessive accumulation of fat. It is one of the most common nutritional disorder in which there is excessive accumulation of adipose tissue in the body beyond physiological limits which results from excessive calorie intake over calorie expenditure. WHO defined obesity as a common chronic disorder of excessive body fat. More than 1 billion people worldwide are obese out of which 650 million

are adults, 340 million adolescents and 39 million children. India has 135 million people are obese. Depending on the BMI (Body Mass Index), Obesity is classified as follows:⁸

BMI	WHO Classification	Description
<18.5kg/m ²	Underweight	Thin
18.5-24.9kg/m ²	Healthy, Normal
25.0-29.9kg/m ²	Grade 1 overweight	Overweight
30.0-39.9kg/m ²	Grade 2 overweight	Obesity
>40 kg/m ²	Grade 3 overweight	Morbid Obesity

2. Symptoms of Obesity⁹

1. Gurugatrata (Heaviness in body)
2. Javoparodha (Inability to do work)
3. Daurgandhya (Foul body odour)
4. Atikshudha (Excessive hunger)
5. Nidradhikya (Excessive sleep)
6. Atipipasa (Excessive thirst)
7. Vyavayakasta (Difficulty in performing sexual act).

Etiology of Obesity- Overweight or Obesity is the result of genetic and environmental factors i.e., to say who is genetically predisposed to obesity with minor changes in the environmental factors starts gaining weight on the other hand one that is not predisposed, takes longer time and requires excessive use of environmental factors for developing obesity. In case of obesity the distribution of fat is limited to abdomen, trunks and buttocks hence it is termed as central obesity. The extremities remain almost thin. The adipose cells are hypertrophied. In metabolic obesity the lesion is inborn or acquired either in the carbohydrate or fat metabolism. So whatever one's taken, more or less, is converted into fat and gets deposited. Habitual hyperphagia or lack of physical exercise or unbalanced diet may lead to secondary metabolic disturbances. Indicating the importance of this disorder, a separate chapter *Medorogadhikar* is mentioned *Yogaratanakara*. Describing the etiology, he says that due to lack of exercise, sleeping during day time and intake of kapha increasing diet the sweet juices of the (ingested) food are converted into *sneha* (fatty acids) which leads to increase in fat. He also explains its pathogenesis and quotes that since the increased meda blocks the channels, so the other dhatus are not properly nourished, as a result fat is further increased and the person becomes incapable of performing the physical activities.

3. Role of Yoga for Obesity

Modern human has numerous conveniences at his disposal to give physical comfort and sensual pleasure. But ultimately instead of peace, rest and happiness he gets lots of physical, mental and emotional tension. Yoga offers men a conscious process to solve the problems of daily

life and evoke the hidden potential in a systemic and scientific way. The word 'Yoga' is derived from the root 'Yuja' which means to unite or integrate. The union of individual consciousness with the supreme consciousness is called Yoga. According to Bhagvad Geeta, Yoga is skill and efficiency in action. It also states Yoga as equanimity in success and failure.¹⁰ Patanjali defines Yoga as the control of fluctuation and mind is Yoga.¹¹ It is integration and harmony among head, heart and limbs. Yoga play important role in management of obesity and for effective complication. Yoga is the art and science of healthy living. Various yoga asanas can be practiced effectively to reduce the weight and achieve normal healthy condition of body and mind.

Asanas are specific postures indicated for various psycho-physical benefits.¹² There are some asanas which help to reduce fat and keeps the person healthy.

1. **Matsyasana** : In this asana posture the shape of the body appears similar to fish in the water. Such a statement is bold as the fact is we don't recognize the posture as fish but one can float on the water without any movement in this asana. This stretches the Thyroid and Pituitary glands. It improves the circulation in these glands assuring healthy functioning. Also the thigh & abdomen muscles are stretched systematically.
2. **Uttanapadasana** : Also known as Sarvangasana or Halasana. This Asana creates pressure on the lower abdomen and stretches abdominal muscles. So that it regulates bowel habit, improve digestion and also be helpful to decrease the amount of fat from greater omentum.
3. **Pavanamuktasana** : The word 'Pavan' means wind and the word 'Mukta' means to release or to make free. It is so called because it is very useful in removing wind or flatulence from the intestine and stomach. This Asana gives an excellent massage to the abdomen. In this pose the abdominal muscles are tensed and simultaneously internal organs are compressed by the folded legs.
4. **Bhujangasana** : This Asana is described in Gheranda Samhita. In Sanskrit, Bhujanga means Kobra. The final position of this Asana resembles the hooded snakes hence it is called Bhujangasana. It produces extension of spinal cord, it expands chest and strengthens chest muscles. The vital capacity of lung is increased by the practice of this Asana regularly. It improves digestion and respiration, it reduce size of protruding belly and shape up the abdomen.
5. **Dhanurasana** : Assuming the shape of a bow at the final position is called Dhanurasana. It is described in Hatha Pradipika and also in Gheranda Samhita. It makes spine and back muscles flexible and checks nervous weakness. It helps in removing constipation and Pitta disorders. It prevents lumbar spondylosis.

The muscles of arms and legs becomes strong by regular practice of this Asana. This Asana also reduce extra fat from abdomen.

6. **Trikonasana** : This Asana has also come through tradition. It has been described widely in modern Yoga texts. We assume a triangular form through this practice hence it is called as Trikonasana. Its practice makes the spine flexible hence is useful in back pain. It reduces stiffness of hip joint and makes it flexible. It strengthens the muscles of arms and improves stone and tolerance.
7. **Pashchimottanasana** : This Asana is found in Hatha Pradipika. The meaning of 'Pashchima' is back and that of 'Tana' is stretch. This Asana strengthens the abdominal muscles and shape up abdomen. It removes the possibility of sciatica. It reduces the tension of thigh and calf muscles and make it flexible. It reduces the stiffness of the hip joints.

4. Discussion

The world is looking towards drugless therapies like Yoga and Naturopathy. Both are rapidly growing as the best alternative treatments. Sushruta has also mentioned the drugless therapy and quotes that the diseases may be cured by following proper diet and lifestyle without any medicine. But in the absence of proper diet and lifestyle, even after giving hundreds of medicines, the disease cannot be cured. The utility of Yoga in the management of overweight and obesity is seen. All these factors are important in determining the life style, dietary habits and behavior as well as health consciousness of the patients. The dietary styles and quality of diet are also vital factors in maintenance of proper functioning of digestive system. Any wrong habit can lead to disturbances in these mechanisms. Improper digestion leads to accumulation of toxins in the body, ultimately resulting in to obesity.

Sedentary life style is the main cause of excess deposition of fats in the body. Increased calorie intake and decreased work out create the imbalance in homeostasis resulting into ample physical and psychological disorders. Exercise is the only non-invasive way to burn excess calories. To resist and reduce further accumulation of toxins in the body, Day time sleep should be avoided.

Asans like Pavanmuktasana, Uttanapadasana, Paschimottanasana, Dhanurasana, Matsayasana etc are effective in reducing the deposition of fat (abdominal in particular) through the stretch receptor stimulation. These also improve muscle tone and muscle power to strengthen the musculoskeletal system. Other balancing postures like Tadasana, Vrikshsana provide the mind-body balance to increase self-consciousness, self-awareness and self-realization.

Yoga decreases the levels of stress hormones in the body, which leads to enhancing mood and reducing anxiety.

211 Also, it works in keeping away from conditions such
 212 as hypertension and diabetes. All this contributes to
 213 better health and decreases one's frequency of relying on
 214 medicines responsible for weight gain. A good mood creates
 215 an environment of mindful eating and curbs unnecessary
 216 or untimely cravings. This brings a change in eating habits
 217 and can support weight loss. Yoga reduces joint pains and
 218 other discomforts of the body, which leads an individual,
 219 be more active throughout the day. This, in turn, can also
 220 initiate an additional exercise routine, speeding up the
 221 weight loss process more.

222 Thus Yoga can be advised as the beneficial therapy
 223 in improving the quality of life, promoting health and
 224 preventing ailments.

225 5. Conclusion

226 Faulty dietary habits and sedentary life style are the main
 227 etiological factors in pathogenesis of obesity. Yoga therapy
 228 shows moderate improvement in the subjective symptoms of
 229 obesity and significant results in weight and BMI reduction.
 230 As a lifestyle disorders (Obesity) is very common in present
 231 time. Yoga and balanced diet play a important role in the
 232 prevention of obesity.

233 6. Source of Funding

234 None.

235 7. Conflict of Interest

236 None.

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