



# STHOULYA A Pandemic Disease-Evidence Based Research

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**ABSTRACT:**

The burden of lifestyle disorders is rapidly increasing worldwide. Modernization, affluence, science and technological development lead to still more sedentary life styles. By exposing oneself to all these factors human being unknowingly invited a number of diseases, Sthaulya (obesity) is one which disturbs physical, mental and social health of an individual.

To identify the main lifestyle related *Aharatmaka*(dietary factors), *Viharatmaka* (physical activities) and *Manasika* (psychological) factors associated with *Sthaulya* (obesity) and to assess the quality of life with pre-designed and pre-tested questionnaire about Ashta Doshas in Sthaulya. 250 subjects in age group 20-60 years, irrespective of sex, religion and socio-economic status, were selected randomly. The survey was done by Google form questionnaire. The survey study revealed that intake of Guru and Snigdha Ahara (heavy fatty food), Avyayama(lack of involvement in physical activities), Divasvapna (day sleep) and psychological

distress are the main lifestyle related factors strongly associated with the Sthaulya (Obesity) Ashtadoshas of Ati-Sthoulya persons .i.e. with BMI >40 were affected with Ashtadoshas.

**KEY WORD:** Sthaulya, Obesity, Ashtadosha, Survey.

## INTRODUCTION:

Ayurveda being the science of life emphasizes importance in maintaining health of healthy individual and curing the disease of an ill. Health of an individual is a dynamic process influenced by the factors making the individual able to survive. The factors which determine the health of a person are many, but the two major factors are genetic makeup, which determines the predisposition to disease & lifestyle. Inherited factors cannot be changed but adaptation can be made in our behavior to control the risk of disease & injury. These adaptations are also referred as lifestyle. Obesity is one among the lifestyle disorder which contributes to ill health and serious public health problem of 21st century. Over weight and obesity are 5th leading risk of global deaths, worldwide obesity has more than doubled since 1980, in 2014, more than 1.9 billion adults, 18 years and older, were overweight; of these over 600 million were obese.

Significance of Sthoulya as a pathological condition has changed over years from the time of Charaka Samhita (ancient Ayurvedic treatise) to the later authors. This may be due to the prevalence of disease which gradually increased in the course of time. Understanding this disease from Ayurvedic perspective is the most important need of the present era, as it has reached the pandemic levels and has a great influence on morbidity and mortality. Ayurveda consider Sthoulya as a condition of a person, "on account of the excessive increase of Meda (fatty tissue) and Mamsa (muscular tissue) of that person is disfigured with pendulous, buttocks, belly and breasts; and whose increased bulk is not matched by a corresponding increase in energy". Ayurveda and western medicine consider obesity as metabolic disorder<sup>1,2</sup>.

The strong negative impact of obesity on physiological health has been well established. However the impact of obesity on psychological & social functioning has been studied less extensively while this is generally believed that obesity has an adverse effect on many areas of psychological functioning. The impact of weight on overall quality of life has not been studied directly.

## AIMS AND OBJECTIVES:

To identify lifestyle related factors associated with Sthaulya (obesity) among patient aged between 20-60 years.

## MATERIAL AND METHODS

The study was conducted in 250 subjects of obesity which lead to a better understanding of physical, mental & social problems of obese people helped us to educate them in a proper way to lead a happy life and to reduce the complications of obesity also to see the relationship between Prakruti and Vikriti i.e Sthoulya<sup>3</sup>. Cross-sectional survey study was conducted among 250 Sthaulya (obese) patients with Google survey form.

**OBSERVATIONS:**

Observations related to principle variables viz: age, gender, education, occupation, socio-economic status, family history, chronicity of disease, body mass index (BMI), Aharatmaka Nidana which includes food intake pattern, timing, quantity, heavy food intake in evening, heavy breakfast, fatty food intake, intake of more sweets, water consumption in relation to food, frequency of taking food items weekly like ghee and ghee based sweets, milk products, bakery products, fatty food, non-veg etc., Viharatmaka Nidana includes involvement in physical activities, sleep pattern, day sleep, duration of sleep in 24 hours, waking up time in morning and Manasika Nidana includes distribution of patients based on psychological factors.

**DISCUSSION**

The present cross sectional study was carried out. Total 250 subjects of Sthaulya (Obesity) were surveyed to determine the lifestyle related etiological factors associated with the Sthaulya (obesity). Obesity is a complex, multi factorial chronic disease; although genetic susceptibility may explain up to 40% of the obesity phenotype. Technological, lifestyle and cultural changes over the past 50 years are being implicated as the most likely cause of the recent obesity epidemic. Moreover psychological and behavioral issues also play significant roles in both the development and consequences of obesity. The discussion regarding the findings are given in detailed in the following sections.

**Age and gender:**

In present survey study, it was observed that majority of the patients (69.2%) were in between 20-40 (20-30- 34.4% and 31-40- 34.8%) years age group. It is due to the increasing trend of sedentary lifestyle among new generation which contributes to increase in incidence of Sthaulya.

According to Ayurveda Madhyama Awastha (middle age) is the stage of life when absolute development of Dhatu (fundamental tissue) takes place. Evidences also supports the same observations i.e., excess weight gain usually achieved during middle age. Out of 250 patients surveyed, 208 (83.2%) were female. A number of physiological processes are believed to contribute to an increased storage of fat in females. Such fat deposits are believed to be essential in ensuring female reproductive capacity. Females have a tendency to channel extra energy into fat storage while males use more of this energy for protein synthesis<sup>4</sup>.

**Occupation:**

Maximum patients (70.4%) in this study were housewives followed by private sector employees (10.4%). This can be attributed to the fact that the occupational status of a person determines his/her life style. Now day's housewives are making use of electronic machines and gadgets for most of the household works due to which the physical activity is minimized. Another reason may be as the females are more involved in caring family members and due to that they neglect their own health needs. Similarly private sector employees are having sedentary type of occupation which is associated with higher risk of Sthaulya in them<sup>5</sup>.

**Socio-economic status:**

Previously it was considered that Sthaulya is a disease of affluent society but the trend have changed and Sthaulya can be seen even in lower as well as middle class people. In this study it has observed that maximum numbers of patients (79.6%) belong to middle socio-economic status. This is due to the fact that obesity is related with faulty lifestyle including dietary habits and not specifically with the income and socio economic status.

**Lifestyle related factors:**

Dietary intake contributes directly to the energy consumed. Dietary intake of people has changed over time, possibly contributing to the rise in over weight and obesity in India. The modern food environment provides a wide range of opportunities to consume food and drink products. In Gujarat state, especially in Jamnagar area it was found that people ate food rich in fat and carbohydrates. Body weight depends upon the balance between calories consumed and calories used. This balance depends largely on genetic make-up, level of physical activity and resting energy expenditure. If more calories are consumed than expended, the excess calories are stored as fat adipocytes. Overweight and obese people eat much and engage in little physical activity. This is also a fact that few person in spite of taking high fatty, carbohydrate rich food items, do not suffer from weight gain or obesity. The daily energy expenditure involves basal expenses, termed effect of food and physical activity expenses. The basal metabolic rate (BMR) is the largest contributor to energy expenditure and it is defined as the energy required for performing vital body functions at rest. Even if two individuals consume more or less the same amount of calories, the one with the higher metabolic rate will surely burn fast and more calories from the food intake. The one whose metabolism is slower, will eventually not burn all the calories. Instead, the excess calories would be converted into fats resulting to an increase in body weight<sup>6</sup>.

**Food intake pattern:**

In the present study, it was found that maximum patients (60%) take food when feel good hunger. Maharshi Charaka has mentioned that Sthaulya patients have good appetite and they take food in large quantity to satisfy their hunger but due to pathology of disease, only the Medo Dhatu gets nourished and other Dhatus undergo diminution. It is also found that 44.4% patients, 1-2 days in a week, take food just because it is the time to have food and it may be due to their daily schedule without paying attention to their appetite. This kind of eating behavior may lead to Mandagni and production of Ama which further leads to Medo Dhatvagni Mandya and Medo Dhatu Vriddhi

**Quantity of food intake:**

Maximum patients (50.4%) for 3-4 days weekly and 25.6% patients for more than 5 days/week ate food in a manner that their stomach is fully filled and heaviness was felt after eating. Excess quantity of food intake without considering the status of Agni (digestive fire) is one of the important causes of Sthaulya. Maharshi Charaka has mentioned Atisampuranas the cause of Sthaulya<sup>7</sup>.

**Intake of Non-Veg/sweets/deep fried food in evening or nighttime:**

In this study it was found that 51.6% patients take deep fried food/sweets or non vegetarian foods in their evening/night meal once or twice daily. Intake of Madhura (sweet), Snigdha (unctuous) Ahara (food)

increases Medo Dhatu in body

#### **Intake of deep fried/sweets/non Veg in breakfast:**

In this survey study it was found that maximum patients (44.8%) 1-2 days in a week and 17.6% thrice/quadruple times weekly take deep fried/sweets/non veg food items in their breakfast. Such Snigdha (unctuous), Madhura (sweet) and Guru (heavy) Ahara (food) contribute to the increase of Medo Dhatu in body.

#### **Fatty food intake:**

Intake of Snigdha (unctuous) Ahara is mentioned as a cause of Sthaulya. In this study it was found that 56.8% of the patients had intake of ghee/butter containing food for 3-4 days in a week and 25.2% patients for more than 5 days in a week and this is a strong reason of increased incidence of Sthaulya. Consumption of high-fat foods is thought to be a particularly powerful predictor of weight gain because of the efficiency with which fat is metabolized and its high caloric density and palatability. Furthermore, fat intake produces weak satiety signals relative to other macronutrients, which results in greater overall intake<sup>8</sup>.

#### **Water intake immediately after food:**

Intake of water immediately after having food results in the Sthoulyata. Taking little quantity of water in the mid of the meals is best to maintain the healthy status of body. In present study it was found that maximum numbers of patients (51.2%) drink water immediately after food intake for more than 5 days in a week and 33.2% patients follow this for 3-4 days in a week.

#### **Liking for sweet taste food:**

Intake of Madhura Ahara (sweet food) is mentioned as cause of Sthaulya. In this study it was found that 41.8% of the patients for 1-2 days in a week and 17.2% of patients for 3-4 days in a week were used to sweet food intake

#### **Frequency of taking dairy foods items weekly:**

In the study it was found that 41.2% of patients for 1-2 time and 27.2% of patients for more than six times and same percentage of patients for 3-4 days in a week use milk or milk products. Intake of milk and milk products causes Kapha and Medo Vriddhi which is an important cause of Sthaulya.

#### **Intake of Ghee and Ghee based sweets:**

Ghrita is Madhura, Shita and increases Kapha Dosha. Excess intake of Ghee is mentioned as a causative factor for Sthaulya and in this study it was found that maximum patients (53.6%) use ghee more than six times in a week and 22.4% patients take 3-5 times in a week. Intake of Ghee based sweets for 1-2 times in a week was also noticed in 34.8% of patients and 8% patients reported that they use it 3-5 times in a week. This is also one of the important causes of Sthaulya

#### **Frequency of fatty food intake:**

In present study, it was found that most of the patients (52.8%) use oily and fried food 3-5 times in a week and 34.4% take more than six times in a week. This is also found that people prefer to take oily and fried

food in all the three times that is breakfast, lunch and dinner. In Ayurvedic classics Snigdha Ahara Sevana (intake of unctuous food) is mentioned as etiologi cal factor for Sthaulya

#### **Viharatmaka Nidana:**

The energy balance model of adiposity stipulates that weight gain occurs if caloric intake exceeds energy expenditure. Obesity occurs when energy intake from food and drink consumption is greater than energy expenditure through body's metabolism and physical activity over a prolonged period, resulting in the accumulation of excess body fat. In present study it was found that most of the patients are having sedentary lifestyle and they are very less involved in physical activities. The details of the finding are discussed below.

#### **Involvement in physical activity:**

Involvement in physical activities has decreased overtime due to technological advancement. Lack of physical activity and sedentary life style is mentioned as the cause of Sthaulya. In this study it was found that only 2.4% of patients for 3-4 days in a week indulge in exercise or brisk walk and only 5.2% patients for 1-2 days in a week perform Yoga, Asana. Maximum patients rarely or never do exercise or brisk walk or Yoga, Asana etc., Even to cover the short distance they prefer vehicles instead of walking. To maintain the perfect healthy state of body, our energy expenditure should be in accordance to our food intake but here, most of the patients were found to be involved in fatty food intake, that also in excess quantity but their involvement in physical activity is very less and that was found to be the strong etiologi cal factor for Sthaulya<sup>9</sup>.

#### **Sleep pattern:**

Like proper diet, proper sleep is also essential for the maintenance of the body. Corpulence and emaciation are specially conditioned by proper and improper sleep and diet. Excess sleep and day sleep are mentioned as the causes of Sthaulya. In present study it was found that 35.6% patients always sleep in day time and 24.8% patients perform the above pattern 3-4 days in a week. Most of these patients indulge in day sleep immediately after having lunch. 75.6% patients reported that they sleep in day time for 1-2 hours and 16.4% reported that they sleep for 2-3 hours. Such sleeping habit is very unhealthy and found as a strong cause of Sthaulya.

#### **Sleep duration and wake up time:**

Normally for a healthy adult 6-8 hours of night sleep is recommended and that is enough to get good rest. Waking up early in the morning is also mentioned as a good practice for maintaining good health and longevity. Sleeping for more than 8 hours is not good for health as it leads to weight gain and Sthaulya. In this survey study only 8% patients reported that they never sleep more than 8 hours where as 9.6% for 3-4 days in a week, 30.8% some times and 50.8% rarely sleep for more than 8 hours. Most of these patients (56.8%) reported that they rarely wake up before 6 am and they like (42.8%) to sleep for long time 1-2 days in a week. Many of these patients sleep in a very comfortable thick soft bed. Sleeping in Sukha Shayya (comfortable soft bed) is also an etiologi cal factor for Sthaulya.

**Manasika Nidana:**

The rapid increase in the prevalence of obesity suggests that psychological and behavioral factors, rather than biological factors, are primarily responsible for this trend. Individuals who suffer from psychological disorders (e.g., depression, anxiety, and eating disorders) feel more difficult in controlling their consumption of food, exercising an adequate amount and maintaining a healthy weight. Food is often used as a coping mechanism by those with weight problems, particularly when they are sad, anxious, stressed, lonely and frustrated.

In present study it was found that though the patients are economically not very much distressed and they have sufficient physical comforts but psychologically they are not very happy. In this survey study only 0.8% patients reported that they feel happy much more than usual considering all the things in life and 21.2% more than usual and 32% told they are not at all happy and 46% reported that they feel not more than usual happiness considering all the things in life.

Maximum patients (79.2%) reported that they are enjoying their day to day activities not more than usual. Only 12% patients reported that they enjoy their day to day activities more than usual where as 8.8% patients not at all enjoy their day to day activities. These finding shows that though we are improving economically and able to gather physical comforts we have ignored our psychological need such as love, compassion, relatedness, optimism and being in equanimity in all situations. In this study it was found that only 18.8% patients feel relaxation in their life, where as 71.2% patients no more than usual and 9.6% not at all feel relaxation in their life. The truth is we have failed to identify our actual need. In today's world, everyone is living under constant stress. Stress is seen as a major cause of worry as far as psychological health is concerned, with studies showing a constant increase in stress, especially in urban population of India<sup>10</sup>.

In the study it was found that maximum patients (66.8%) feel lazy more than usual for doing work. Only 1.2% patients reported that they not at all feel lazy and 26.8% replied that they work not more than usual feel lazy for doing work. Generally Overweight children and adults are labeled as lazy, unmotivated and lacking self-discipline.

Though the awareness about obesity is increasing but despite this rise in awareness and willingness to accept obesity as a chronic condition of clinical significance, obese individuals are subjected to a high level of stigmatization resulting in discrimination.

**CONCLUSION:**

In the present survey study, the baseline characteristics shows that, majority of the patients were belonging to middle age group and were having positive familial history. In *Aharatmaka Nidana*, the chief associated factors found were; more frequency of intake of food containing more oil/butter/ghee, drinking water

immediately after food, preferring sugar loaded food items, ghee based sweets and intake of milk and milk products habitually. In *Viharatmaka Nidana*, lack of physical activity and sleeping in day time was found as strongly associated with *Sthaulya*. Coming to the *Manasika Nidana*, Ayurvedic classics explained that *Harshanityata*(uninterrupted cheerfulness), *Manasonivritti*(relaxation of tension) etc., are the causative factors of *Sthaulya* Subjects were economically not very much worried and were having sufficient physical comforts but psychologically they were not very satisfied considering all aspects of their life.

Overall to share as conclusion; that heavy fatty food intake, physical inactivity, day sleep for long duration and psychological distress are the main lifestyle related factors which are strongly associated with the *Sthaulya* (obesity).

## REFERENCE:

1. Charaka Samhita by Agnivesha, revised by Charaka and Dridhabala with Ayurveda-Dipika commentary of Chakrapani-Datta edited by Vaidya Y.G.Joshi Sutrasthana 4th Adhyaya Shloka no. 13 Published by Vaidyamitra Publication, Pune 2003.
2. Sushruta, Sushruta Samhita (Nibandha Sangraha of Dalhana); Yadavji Trikamji Acharya editor; 8th edition; 2005; Varanasi, Chaukhambha Orientalia; p. 168 .
3. Sanskrit English Dictionary written by Sir Monier Williams Published by Motilal Banarasidass Publication New Delhi Reprint 1986 Page no.1266.
4. Astangahridaya by Laghu Vagbhata with Sarvangasundara Sanskrit Commentary of Arunadatta and Ayurvedrasayan Sanskrit Commentary of Hemadri Sutrasthana 16th Adhyaya Shloka no.17-18 Edited by Dr.A.M.Kunte Published by Nirnayasagar Press Bombay 1939 Reprint 2000.
5. Ashtangasangraha by Vriddha Vagbhata with Shashilekha Sanskrit Commentary of Indhu Sutrasthana Adhyaya 3 rd Page no.28 Edited by Vaidya Govardhan Sharma Changani Published by Choukhamba Sanskrit Series, Banaras 1945 Reprint 2010.
6. WHO mediacentre, obesity and overweight, factsheet dated Sep 2006 ( Cited World Health Organisation) available from <http://www.who.int/mediacentre/factsheets/fs311/en/index.html>.
7. Sharangadhara, Sharangadhara Samhita; Shree Radhakrishna Parashar; 4th edition, 1994; Shree Baidyanath Ayurveda Bhavan, Nagpur; p.249
8. Ng M, Fleming T, Robinson M, Thomson B, Graetz N, Margono C et al; Global, regional and national prevalence of overweight and obesity in children and during 1980-2013; A systematic analysis for the Global Burden of Disease Study 2013.



9. Stevens GA, Singh GM, La Y, Danaei G, Lin JK, Finucane MM et al; National, regional and Global trends in adult overweight and obesity prevalence; Popul Health Metr, 2012.
  
10. Kelly T, Yang W, Chen CS, Reynolds K, He J; Global burden of obesity in 2005 and projections to 2030; International Journal of Obesity; 2008 Sept; 32(9); 1431- 1437.

