

Critical Analysis of Etiology of *Sthaulya* (Obesity)

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Abstract

Nidana (etiology) is defined as the factors, which cause the disease. Treatment becomes easier by knowing the causative factors of a disease. In this light, it has been clearly stated that *Nidana Parivarjanam* is one type of *Chikitsa* for the most of diseases which is described in Ayurvedic literature. Obesity has been described as *Sthaulya* or *Medoroga* in Ayurvedic texts. This article revolves around the *nidana* of *Sthaulya* described in various texts of Ayurveda. An attempt has been made to understand *Sthaulya* (Obesity) through Modern and Ayurvedic perspective. In this article etiological factors for *Sthaulya* (obesity) are analysed.

Keywords

Sthaulya , *Obesity*, *Etiology*



Greentree Group

Received 26/07/15 Accepted 14/8/15 Published 10/09/15

INTRODUCTION

The word *Nidana* carries two meanings - causative factors (hetu that is etiological factors) and diagnosis (because *nidana* also helps in diagnosis of diseases). In this topic we have discussed only etiological factors. Most of the *Nidana* mentioned by *Acharya Charaka* are of exogenous types, unlike *Acharya Sushruta* and *Vagbhata* who have mentioned endogenous type of causes. *Vagbhata* has also mentioned "*Ama*" as a For better understanding these causes are follows:

causative factor. Only *Charaka* has defined *Beejadoshha* as one of the cause besides other.

All the causative factors described in *Ayurvedic* classics can be classified into four¹ (table 1,2,3,4) groups.

1. *Aharatmaka Nidana*
2. *Viharatmaka Nidana*
3. *Manas Nidana*
4. *Beeja dosha*
5. *Anya Nidana*

AHARATMAKA HETU (Dietetic factors) (Table 1)

- *Ati sampurana* (Over eating)
- *Santarpana*
- *Adhyasana*
- *Guru Aharasevana* (Excessive consumption of sweet food)
- *Madhura Aharasevana* (Excessive consumption of sweet food)
- *Sheeta Aharasevana* (Excessive consumption of cold diet)
- *Snigdha Aharasevana* (Excessive consumption of unctuous food)
- *Sleshmala Aharasevana* (Kapha increasing food)
- *Navannasevana* (Uses of fresh grains)
- *Nava Madhya Sevana* (Uses of fresh alcoholic preparation)
- *Gramya Rasasevana* (Uses of domestic animal's meat and soups)
- *Audak Rasa sevana* (Uses of Aquatic animal's meat and soups)
- *Mamsa Sevana* (Excessive use of meat)
- *Paya Vikar Sevana* (Excessive uses of milk and it's preparations)
- *Dadhi Sevana* (Excessive uses of curd)
- *Sarpi Sevana* (Uses of Ghee)
- *Ikshu Vikara Sevana* (Uses of sugarcane's Preparations)
- *Guda Vikara Sevana* (Uses of sugarcane's Preparations)
- *Shali Sevana* (Excessive use of Rice)
- *Godhum Sevana* (Excessive use of wheat)
- *Masha Sevana* (Uses of phasilous mungo)
- *Rasayan Sevana*
- *Vrushya Sevana*

VIHARATMAKA HETU (Table 2)

• <i>Avyavaya</i> (Lack of sexual life)
• <i>Divaswapna</i> (Day's sleep)
• <i>Asana Sukha</i> (Luxurious sitting)
• <i>Swapnaprasangat</i> (Excessive sleep)
• <i>Gandhamala Sevana</i> (Using of perfumes garlands)
• <i>Bhojanotar Snana</i> (Bathing after taking the meals)

MANSIKA HETU (PSYCHOLOGICAL FACTORS) (Table 3)

• <i>Harashnityatvat</i> (Uninterrupted cheerfulness)
• <i>Achintana</i> (lack of anxiety)
• <i>Priyadarshana</i> (Observations of beloved things)
• <i>Manasonivritti</i> (Relaxation from tension)

BEEJA DOSHA

Charaka has described a specific cause *Beejadoshswabhava* for *Sthaulya*, which means *Sthaulya* may be developed by abnormalities of *Beej*. *Acharya Vagbhata* has described the *Sahaja Sthaulya* due to dietary fault of pregnant lady. Therefore, two miscellaneous causative factors of *Sthaulya* have been described in *Ayurvedic* text. i.e., *Beejadoshajanya* and, *Garbhajvyadhi*.

ANYA NIDANA (Table 4)

• <i>Snigdha Madhura Basti Sevana</i> (Administration of unctuous and sweet enema)
• <i>Tailabhyanga</i> (Massaging of oil)
• <i>Snigdha Udvartana</i> (Unctuous action)
• <i>Beejadoshaswabhava</i> (Heredity)

Obesity (Etiological factors)

The etiology of obesity is far more complex than simply an imbalance between energy intake and energy output. obesity is far more than simply the result of eating too much or exercising too little. Factors responsible for the development of obesity include – Race, sex, and age factors, Ethnic and cultural factors, Socioeconomic status, Dietary habits, Smoking cessation, Pregnancy and menopause, Psychological factors, Lactation history in mothers, Endocrine factors, Metabolic factors, Genetic factors, Daily activity level. Nevertheless, the prevalence of inactivity in industrialized countries is considerable and relevant to the rise in obesity. In the United States, less than half of all adults meet the federal 2008 Physical Activity Guidelines, and fewer than 3 in 10 high school students get at least 60 minutes of physical activity every day.²

Genetics

Obesity is the result of interplay between genetic and environmental factors. Polymorphisms in various genes controlling appetite and metabolism predispose to obesity when sufficient food energy is present. More than 41 of these sites on the human genome have been linked to the development of obesity when a favorable environment is present. People with two copies of the FTO gene (fat mass and obesity associated gene) have been found on average to weigh 3–4 kg more and have a 1.67-fold greater risk of obesity compared with those without the risk allele.³

Heritability

The strong heritability of obesity has been demonstrated in several twins and adoptee studies, in which obese individuals who were reared separately followed the same weight pattern as that of their biological parents and their identical twin. Metabolic rate, spontaneous physical activity, and thermic response to food seem to be heritable to a variable extent. A study by Freeman et al found that having an overweight or obese father and healthy-weight mother significantly increased the odds of childhood obesity, however, having an obese mother and a healthy-weight father

was not associated with an increased risk of obesity in childhood⁴.

Genetic susceptibility loci

Obesity may be caused by a single gene it is rare, but much more commonly it is a complex interplay of susceptibility loci and environmental factors. Genome-wide association studies (GWAS) have found a number of genetic susceptibility loci associated with obesity. A single-nucleotide polymorphism (SNP) in the FTO (fat mass and obesity associated) gene and SNPs near the MC4R (melanocortin 4 receptor) gene have been highly associated with BMI.^{5, 6, 7, 8} There are number of genetic susceptibility loci have been discovered, the effect sizes of the established loci are small, and combined they explain only a fraction of the variation in BMI between individuals. Their low predictive value means that they have limited value in clinical medicine.⁹ Increases in the rate of obesity is due to changes in dietary habits and activity suggests an important role for environmental factors.

Critical analysis of Nidana in relation to Sthaulya –

Role of Aharatmaka Nidana in Sthulya

Ahararasa plays as major role for increasing *Meda Dhatu* in *Sthaulya*. Means, *Sthaulya* and *Karshya*¹⁰ depends upon the quality and quantity of *Ahararasa*. On the basis of *Samanya Vishesh Siddhanta*¹¹, The excessive food consumption of similar substance (*Dravya Samanya*), similar quality (*Guna Samanya*) or similar in action (*Karma Samanya*) helps in the over production of *Dhatu*. In the same manner increase intake of *Aharatmaka Nidana* which are described above causes over production of *Medodhatu*.

Role of Viharatmaka Nidana in Sthaulya

All the *Aharatmaka Nidana* ultimately decreases physical activity, which aggravates *Kapha* and leads of *Meda* deposition. *Viharatmaka Nidana* like *Divaswapna* having *Abhishyandi* property leads to blockage of the micro channels of the body, specifically in *Medovaha Srotas*¹². Moreover, reduced metabolic rate during sleep is an important factor for genesis of excess fat.

Role of Manas Vyapara in Sthaulya

Due to adoption of modern lifestyle, a person has reduced his physical activity and instead of that, the mental work is increased.

As a result now a days the diseases caused by psychogenic factor are seen extensively more. *Acharyas* also mentioned some psychogenic causes of *Sthaulya* in *Ayurvedic* texts, because *Sthaulya* is also considered under the group of psychosomatic diseases.

According to Charak

Harshanitya and *Achintana*¹³ are two psychological factors mentioned *Acharya Charaka*, which are responsible for *Meda Vriddhi*. These factors are *Kapha* aggravating factors lead of *Meda* deposition. With this type of psychological wellbeing and jolliness that person indulges more in worldly pleasure and excess energy stored in the form of *Meda*.

Role of Beejadosh

Acharya Charaka has mentioned that *Beejadosh* plays a major role for *Medovridhi*¹⁴. Defect of *Beejabhagavayava* i.e. part of *Beeja*, which resembles with *Genes*, may lead to defective development of that organ. Also, *Bhavamishra* has mentioned that increased proportionate of *Meda* and decreased proportion of *Shukra* in *Beeja* at the time of conception predisposes towards development of stout but weak

body¹⁵. Moreover, over nutrition particularly with Madhura Rasa during pregnancy is mentioned as a causative factor for birth of obese child, which indicate role of hereditary factor in genesis of Sthaulya¹⁶.

CONCLUSION

Finally it can be concluded that etiological factors for obesity, as described in *Ayurvedic* literature are more or less similar to the modern description. In Ayurveda psychological factors are also described because in Ayurveda it is said body and mind association is important for healthy life. When mental factors are dominant then abnormal changes in the body occur, leading to various diseases.

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