Original Article

Lifestyle related factors associated with *Sthaulya* (obesity) - A cross-sectional survey study

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Abstract

Introduction: 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, out of which *Sthaulya* (obesity) is one which disturbs physical, mental and social health of an individual. **Aims and Objectives:** To identify the main lifestyle related *Aharatmaka* (dietary factors), *Viharatmaka* (physical activities) and *Manasika* (psychological) factors associated with *Sthaulya* (obesity) among the patient aged in between 20-60 years. **Material and Methods:** Cross-sectional survey study was done among 250 patients of *Sthaulya* (obesity) visiting outpatient department of the Institute from the period May 2013 to June 2014. The patients were selected using simple random sampling method. Ethical clearance was obtained from the Institute and Lifestyle related questionnaire was used for survey study which was based on the etiological factors mentioned in the Ayurvedic classics. **Observations and Conclusions:** 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)

Keywords: Lifestyle disorder, Obesity, *Sthaulya*

Introduction

Lifestyle diseases are our own creation. With the evolution of civilization man has became more and more physically inactive. Modernization, affluence, science and technological development lead to sedentary life styles. Such behaviours are trending across the countries and are transferable from one population to another like an infectious disease, affecting disease patterns globally. By exposing oneself to all these factors human beings unknowingly invited a number of diseases, out of which *Sthaulya* (obesity) is one which disturbs physical, mental and social health of an individual. It has reached epidemic proportions globally. According to WHO report, there are more than 250 million obese adults and about 1.1 billion overweight people worldwide.[1] According to the recent report of National Family Health Survey (NFHS-4, 2015-16), prevalence of obesity in India was 18.6% and 20.7% among men and women aged 15–49 years respectively. Particularly in Gujarat, the percentage of female and male who are overweight or obese is 23.7 and 19.7 respectively.[2] Obesity can be seen as the first wave of a defined cluster of non-communicable diseases called "New World Syndrome," creating an enormous socioeconomic and public health of 21st century in both developed and developing countries.[3] Obesity is associated with an increased risk of morbidity and mortality as well as reduced life expectancy and contributes to 2.6 million deaths worldwide every year.[4] In this context, the present survey study was undertaken to identify the main lifestyle related factors associated with *Sthaulya* (Obesity) among patients visiting OPD of the Institute of Post Graduate Teaching and Research in Ayurveda (IPGT & RA), Jamnagar.

Aims and objectives

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

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Material and Methods

Participants and study design

Cross-sectional survey study was conducted among 250 *Sthaulya* (obese) patients visiting the outpatient department of the Institute from period May 2013 to June 2014. The patients were selected using simple random sampling method. Ethical clearance was obtained for this study from the Institutional Ethics Committee (Ref. PGT/7-A/Ethics/2012-2032/3552 dated 25/02/2013) and the study was also registered prospectively in Clinical Trial Registry of India (CTRI) vide CTRI/2013/09/004028 27/09/2013. To fulfill the aims and objectives, Lifestyle related questionnaire was used for survey which was based on the etiological factors mentioned in the Ayurvedic classics that comprise – *Aharatmaka, Viharatmaka* and *Manasika Nidana*. The questionnaire was validated by Departmental Research Committee (DRC) of IPGT & RA (BP/2013-2014/25, dated 04/04/2013). All participants were interviewed in the local language. Each lifestyle related questions were explained properly to the patient and the response was noted in the Survey Questionnaire by a single person. Written informed consent was taken from patients as per the Helsinki declaration after explaining the details of the study and its aims.

Inclusion criteria

- Patients of *Sthaulya* (obesity with >25 BMI), attending the OPD of the Institute who had no confirmed mental illness to participate were selected without discrimination in sex, caste, religion, occupation and economic status
- Age group: - 20-60 yrs.

Exclusion criteria

- Patients having age less than 20 years and more than 60 years
- Pregnant women and lactating mothers
- Known case of diabetes, severe hypertension, cardio vascular diseases, hemiplegia, chronic obstructive pulmonary disease, malignancies, AIDS (acquired immune deficiency syndrome), known cases of tuberculosis and psychiatric patients and obesity due to known hormonal imbalance were excluded.

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. All these are depicted in Tables 1 and 2.

Table 1: Baseline characteristics of patients along with BMI, chronicity and family history

Character	Categories	Number of patients	Percentage
Age	20-30 years	86	34.4
	31-40 years	87	34.8
	41-50 years	53	21.2
	51-60 years	24	9.6
Gender	Male	42	16.8
	Female	208	83.2
Religion	Hindu	202	80.8
	Muslim	39	15.6
	Sikh	1	0.4
	Christian	1	0.4
	Jain	7	2.8
Marital status	Married	218	87.2
	Unmarried	31	12.4
	Widow (er)	1	0.4
Education	Uneducated	19	7.6
	Primary	76	30.4
	Secondary	86	34.4
	Higher secondary	8	3.2
	Graduate	43	17.2
	Post Graduate	18	7.2
Occupation	House wife	176	70.4%
	Business	20	8%
	Govt. employee	7	2.8%
	Private sector employee	26	10.4%
	Others	21	8.4%
Socio-economic status	Poor	33	13.2
	Middle	123	49.2
	Upper Middle	76	30.4
	Rich	18	7.2
BMI (kg/m^2)	25-29.9	85	34
	30-34.9	114	45.6
	35-39.9	42	16.8
	>40	9	3.6
Chronicity	< 2 years	35	14
	2-5 Years	78	31.2
	>5 years	137	54.8
Family history	Paternal	53	21.2
	Maternal	97	38.8
	Negative	122	48.8

Discussion

The present cross sectional study was carried out in the institute. Total 250 patients of *Sthaulya* (Obesity) were surveyed to determine the lifestyle related etiological factors associated with the *Sthaulya* (obesity). Obesity is a complex, multifactorial chronic disease. Although genetic susceptibility may explain up to 40% of the obesity phenotype,[5] technological, lifestyle and cultural changes over the past 50 years are being implicated as the most likely cause of the recent obesity epidemic.[6] Moreover psychological and behavioural issues also play significant roles in both the development and consequences of obesity.[7] The discussion

Table 2: Observations of lifestyle related factors

Factors	Categories	Number of patients	Percentage
	Aharatmaka Nidana		
Intake of food when they feel good hunger	More than 5 days in a week	19	7.6
	3-4 days in a week	150	60
	1-2 days in a week	69	27.6
	Less than once in a week	12	4.8
Intake of food just because it is the time to have food	More than 5 days in a week	4	1.6
	3-4 days in a week	58	23.2
	1-2 days in a week	111	44.4
	Less than once in a week	77	30.8
Eat full of your stomach and feel heaviness after eating	More than 5 days in a week	64	25.6
	3-4 days in a week	126	50.4
	1-2 days in a week	52	20.8
	Less than once in a week	8	3.2
Intake of food accordance to hunger level	More than 5 days in a week	1	0.4
	3-4 days in a week	22	8.8
	1-2 days in a week	122	48.8
	Less than once in a week	105	42
Intake of non veg/sweet/deep fried items in your evening/night food	More than 5 days in a week	1	0.4
	3-4 days in a week	27	10.8
	1-2 days in a week	129	51.6
	Less than once in a week	92	36.8
	Never	1	0.4
Intake of non-veg, deep fried food, sweets in your breakfast	More than 5 days in a week	3	1.2
	3-4 days in a week	44	17.6
	1-2 days in a week	112	44.8
	Less than once in a week	88	35.2
	Never	3	1.2
Intake of more oily food	More than 5 days in a week	63	25.2
	3-4 days in a week	142	56.8
	1-2 days in a week	43	17.2
	Less than once in a week	2	0.8
Drink water immediately after having food	More than 5 days in a week	128	51.2
	3-4 days in a week	83	33.2
	1-2 days in a week	29	11.6
	Less than once in a week	10	4
Intake of sweet taste food	More than 5 days in a week	7	2.8
	3-4 days in a week	43	17.2
	1-2 days in a week	103	41.2
	Less than once in a week	97	38.8
	Frequency of taking food items weekly		
Milk or milk products	More than 6 times	68	27.2
	3-5 times	68	27.2
	1-2 times	103	41.2
	Less than 1	10	4
	Rarely or Never	1	0.4
Intake of Ghee	More than 6 times	134	53.6
	3-5 times	56	22.4
	1-2 times	35	14
	Less than 1	20	8
	Rarely or Never	5	2
Intake of Ghee Based sweets	More than 6 times	2	0.8
	3-5 times	20	8
	1-2 times	87	34.8

Contd...

Table 2: Contd...

Factors	Categories	Number of patients	Percentage
	Frequency of taking food items weekly		
	Less than 1	102	40.8
	Rarely or Never	39	15.6
Sugar cane preparations	More than 6 times	22	8.8
	3-5 times	62	24.8
	1-2 times	40	16
	Less than 1	47	18.8
	Rarely or Never	79	31.6
Oily and fried food	More than 6 times	86	34.4
	3-5 times	132	52.8
	1-2 times	24	9.6
	Less than 1	6	2.4
	Rarely or Never	2	0.8
	Viharatmaka Nidana		
Exercise or go for a brisk walk in the morning/evening	More than 5 days in a week	0	0
	3-4 days in a week	6	2.4
	1-2 days in a week	32	12.8
	Less than once in a week	58	23.2
	Never	154	61.6
Yoga Asana in Morning/evening time at least for 30 min.	More than 5 days in a week	0	0
	3-4 days in a week	1	0.4
	1-2 days in a week	13	5.2
	Less than once in a week	26	10.4
	Never	210	84
Participate in sportive/physical activity	More than 5 days in a week	0	0
	3-4 days in a week	0	0
	1-2 days in a week	3	1.2
	Less than once in a week	17	6.8
	Never	230	92
Sleep in day time	More than 5 days in a week	89	35.6
	3-4 days in a week	62	24.8
	1-2 days in a week	38	15.2
	Less than once in a week	46	18.4
	Never	15	6
Sleep immediately after food in Day time	More than 5 days in a week	83	33.2
	3-4 days in a week	64	25.6
	1-2 days in a week	42	16.8
	Less than once in a week	46	18.4
	Never	15	6
Duration of day sleep	1-2 hours	189	75.6
	2-3 hours	41	16.4
	More than 3 hours	5	2
	No day sleep	15	6
Sleep more than 8 h in 24 hour cycle	More than 5 days in a week	2	0.8
	3-4 days in a week	24	9.6
	1-2 days in a week	77	30.8
	Less than once in a week	127	50.8
	Never	20	8
	Viharatmaka Nidana		
Enjoy sleeping for long time	More than 5 days in a week	12	4.8
	3-4 days in a week	45	18
	1-2 days in a week	107	42.8
	Less than once in a week	82	32.8
	Never	4	1.6

Contd...

Table 2: Contd...

Factors	Categories	Number of patients	Percentage
Sleep in very comfortable bed (thick soft cosy bed)	More than 5 days in a week	66	26.4
	3-4 days in a week	92	36.8
	1-2 days in a week	34	13.6
	Less than once in a week	55	22
	Never	3	1.2
Manasika Nidana			
Happy while considering all the things in life	Not at all	80	32
	Not more than usual	115	46
	More than usual	53	21.2
	Much more than usual	2	0.8
Enjoying your day to day activities	Not at all	22	8.8
	Not more than usual	198	79.2
	More than usual	30	12
	Much more than usual	0	0
Generally feel content	Not at all	19	7.6
	Not more than usual	193	77.2
	More than usual	37	14.8
	Much more than usual	1	0.4
Feeling relax	Not at all	24	9.6
	Not more than usual	178	71.2
	More than usual	47	18.8
	Much more than usual	1	0.4
Feels lazy for doing work	Not at all	3	1.2
	Not more than usual	67	26.8
	More than usual	167	66.8
	Much more than usual	13	5.2

regarding the findings are given in detailed in the following sections.

Discussion on baseline characteristics

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. Modern evidences also supports the same observations i.e., excess weight gain usually achieved during middle age.[8] 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. This pattern of energy usage or 'nutrition partitioning', in females contributes to further positive energy balance and fat deposition.[9] According to the data gathered from National Family Health Survey (NFHS) in Gujarat State, the percentage of females who are overweight or obese is more than male [Table 1].[10]

Education

Education is a prime mile stone indicative of awareness and living standards of population. In present study maximum patients (92.4%) were educated; but in that only 17.2% were having education at graduate level and 7.2% were having education at post graduate level, 34.4% patients were having education at secondary level and 30.4% were educated only at primary level. Lower education status is associated with lack of awareness about health care so that they are engaged in faulty diet habits and less physical activity which are strongly associated with *Sthaulya* [Table 1].

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 a days 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 [Table 1].

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 was found 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 [Table 1].

BMI

In present survey study 34% patients were having BMI in between 25-29.99, 45.6% patients were having BMI in between 30-34.9, 16.8% patients were having BMI in between 35-39.9 and 3.6% patients were having BMI more than 40. In this study the factors found to be influencing higher BMI were their eating habits, which include consumption of high fatty diet, use of more milk products and sweet items, long sleep duration and physical inactivity.

Chronicity

In Chronicity of the disease, it was found that 14% patients were having chronicity less than 2 years, 31.2% patients were having chronicity in between 2-5 years and 54.8% patients were having chronicity more than 5 years. This shows that maximum patients were exposed to the *Sthaulyakara Nidana* (causative factors of obesity) for a longer period of time.

Family history

In present survey study 51.2% patients were having positive family history and 48.8% patients were having negative family history of obesity. It is important to note a fact that, the ancient physicians were able to recognize the role played by one's heredity causing obesity and technically termed the genetic predisposition of obesity as *Beeja-svabhava* of *Atisthaulya*. Maharshi Charaka has clearly mentioned *Beeja svabhava* as an etiological factor of *Sthaulya*.[11] Role of the genetic and chromosomal abnormalities in the pathogenesis of Obesity has also been proved by the modern science. Moreover the offspring inherit the physical and eating habits of their obese mother or father which leads to the excessive weight gain. As in this study it was found that 48.8% patients were having negative family history which shows faulty lifestyle and dietary habits are important factors associated with *Sthaulya*. Studies suggest that 25% to 70% of obesity can be explained by genetics.[12,13] However, in most cases, genes involved in weight gain do not directly cause obesity but rather they increase the susceptibility to fat gain in subjects exposed to an environment characterized by an abundance of food and limited physical activity.[14] Some individuals with a genetic tendency may avoid obesity by maintaining habits of healthy eating and physical activity behaviours [Table 1].[15,16]

Discussion on lifestyle related factors

Dietary intake contributes directly to the energy consumed. Dietary intake of people have 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, thermed effect of food and physical activity expenses.[17] 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.[18] 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.[19]

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 behaviour may lead to *Mandagni* and production of *Ama* which further leads to *Medo Dhatvagnimandya* and *Medo Dhatu Vriddhi* [Table 2].

Quantity of food intake

In this study 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 *Atisampurana* as the cause of *Sthaulya* [Table 2].[20]

Intake of Non-Veg/sweets/deep fried food in evening or night time

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 [Table 2].[21,22]

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 [Table 2].

Fatty food intake

Intake of *Snigdha* (unctuous) *Ahara* is mentioned as a cause of *Sthaulya*.[22] 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.[23] Furthermore, fat intake produces weak satiety signals relative to other macronutrients, which results in greater overall intake [Table 2].[24]

Water intake immediately after food

Intake of water immediately after having food results in the stoutness of the body. Taking little quantity of water in the mid of the meals is best to maintain the healthy status of body.[25] In present study it was found that maximum number 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 [Table 2].

Liking for sweet taste food

Intake of *Madhura Ahara* (sweet food) is mentioned as cause of *Sthaulya*.[26] 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 [Table 2].

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* [Table 2].

Intake of Ghee and Ghee based sweets

Ghrita is *Madhura, Shita* and increases *Kapha Dosha*.[27] 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* [Table 2].

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 etiological factor for *Sthaulya* [Table 2].[28]

Viharatmaka Nidana

The energy balance model of adiposity stipulates that weight gain occurs if caloric intake exceeds energy expenditure.[29] 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.[30] 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*.[31,32] 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 etiological factor for *Sthaulya* [Table 2].

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.[33] Excess sleep and day sleep are mentioned as the causes of *Sthaulya*.[34-36] 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* [Table 2].

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 etiological factor for *Sthaulya*[37] [Table 2].

Manasika Nidana

The rapid increase in the prevalence of obesity suggests that psychological and behavioural factors, rather than biological factors, are primarily responsible for this trend.[38] Obesity is a psychological as well as physical problem. 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.[39]

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 happyness 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 enjoys their day to day activities more then usual where as 8.8% patients not at all enjoys 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[40] [Table 2].

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 then usual feel lazy for doing work. Generally Overweight children and adults are labelled as lazy, unmotivated and lacking self-discipline.[41,42]

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.[43]

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*. In present survey also it was found that, even though the patients 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 from present survey it can be concluded 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).

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Conflicts of interest

There are no conflicts of interest.

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हिन्दी सारांश

स्थौल्य से संबंधित जीवन शैली - एक प्रतिनिध्यात्मक सर्वेक्षण

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विश्व मे अनुचित जीवन शैली संबंधित व्याधियों का प्रमाण बढ़ रहा है। आधुनिकरण, समृद्धि तथा प्रौद्योगिकी प्रगति के कारण आसीनता प्रधान जीवन शैली अधिक प्रचलित हो रही है। इस प्रकार की आदतों से मनुष्य ने अनजाने में कई व्याधियों को आमंत्रित किया है जिसमें स्थौल्य एक है जो कि मनुष्य के शारीरिक मानसिक तथा व्यावहारिक जीवन पर दुष्प्रभाव उत्पन्न कर रहा हैं । अतः प्रस्तुत सर्वेक्षण में स्थौल्य के २०-६० वर्ष के रोगियों में आहरात्मक, विहारात्मक एवं मानसिक भावों के प्रभाव का अध्ययन करने का प्रयास किया गया। इसके लिए प्रतिनिध्यात्मक सर्वेक्षण द्वारा संस्था के बहिरंग विभाग में उपस्थित होने वाले स्थौल्य के २५० रोगियों का मई २०१३ से जून २०१४ जे दौरान अध्ययन किया गया। प्रस्तुत अध्ययन के लिए जीवनशैली संबंधी प्रश्नावली का प्रयोग किया। जिसमें आयुर्वेद के अनुसार हेतुओं का उल्लेख था। सर्वेक्षण द्वारा यह ज्ञात हुआ कि गुरु, स्निग्ध आहार सेवन, अव्यायाम,दिवास्वप्न तथा मानसिक अवसाद यह स्थौल्य को उत्पन्न करने वाले प्रमुख जीवन संबंधी हेतु हैं।