



(CASE REPORT)



Case study on selected herbal formula from *Rasaratna Samuccaya* in the management of *Sthaulya* (overweight and obesity)

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Abstract

A third of the world's population is now thought to be overweight or obese, making obesity a complex multifactorial disease. Since 1980, the prevalence of overweight and obesity has increased considerably worldwide, nearly tripling. The prevalence of obesity has increased among persons of all ages and genders, regardless of region, race, or socioeconomic status; however, it tends to be higher among older people and women. Over the past few years, the prevalence rates of obesity appear to have plateaued in a few developed countries. In epidemiological study, the body mass index (BMI) is frequently used to define overweight and obesity. But BMI is not very sensitive and there is a lot of individual variation in the percentage of body fat for any given BMI score, which is partly explained by factors like age, sex, and ethnicity. *Cinnamomum tamala* (*Thēja Patra*) and *Curcuma longa* (*Haridrā*) were the ingredients of a selected formula from an authentic text and this review's objective was to investigate how well the herbal formula from the *Rasaratna Samuccaya* (classical text) work to treat obesity. An obesity case was used in the current research article. The patient had been overweight for 12 years, which made daily activities difficult for him and gave two tea spoons of selected ingredients in the form of powder twice daily for one month and compared subjective and objective parameters. Our use of Ayurvedic medicine, which includes *Aushadha* (medication) and restricted food, has produced exceptional results. According to the analysis of this case study the selected herbal formula is useful in the treatment of obesity.

Keywords: Obesity; Overweight; *Rasaratna Samuccaya*; *Sthaulya*

1. Introduction

Obesity, according to the World Health Organization (WHO), is "a condition of abnormal or excessive fat accumulation in adipose tissue, to the extent that the health may be impaired." Obesity is a disease process characterized by an abnormal accumulation of body fat and has a complex genetic-environmental etiology that has numerous adverse effects on various organs. The finding that the BMI value associated with the lowest relative mortality is slightly higher in older persons than in younger ones led to the widespread acceptance that obesity is less hazardous in older adults. According to this definition of BMI, which is $[\text{Weight (kg)}/\text{Height (m}^2\text{)}]$, it is a gauge of adiposity ^[1].

The BMI scale was created based on the observation that, in people with typical body frames, body weight is inversely proportional to height squared. The classification system and recommendations for preventing obesity classify a BMI of 18.5 to 24.9 kg/m² as a healthy body weight, 25.0 to 29.9 kg/m² as overweight, and 30 kg/m² as obese ^[2]. Historically, under-nutrition and infectious diseases have been seen as the two biggest health issues in underdeveloped nations, whereas obesity has been associated with wealthier nations. However, as obesity rates have recently increased globally,

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developing countries—particularly those in South Asia—now have to deal with the issues of both overeating and undereating. With a population of over 20 million, Sri Lanka is a South Asian nation. Recently, Sri Lanka was given the lower-middle income classification [3].

Obesity is a symptom of some diseases, including Prader-Willi syndrome and Cushing's syndrome. Although hormonal imbalance is frequently blamed in women, weight gain is typically minimal and brought on by water retention. Obesity is influenced by a combination of genetic and environmental variables as well as food consumption, appetite regulation, energy expenditure, physical activity, and thermogenesis. Due to dietary-induced thermogenesis, thermogenesis is lower in obese and post-obese subjects than in lean subjects [4] [5]. Due to its high rates of illness and mortality as well as its widespread occurrence, this is one of the most significant public health concerns in the world. Globally, 44% of people with diabetes mellitus, 7% of people with ischemic heart disease, and 41% of people with certain cancers were overweight or obese in 2015 [6].

Obesity, or *Athisthoulya* as it is known in Ayurveda, is thought to be caused by an excessive buildup of the material *Medō Dhātu* (fat tissue) in the body. Different *Āchāryās* (teachers) have different ways of defining the condition of "*Sthula*" or "*Sthoulya*," and obesity, which is caused by *Medōdhatvagnimandya* (reduced metabolism of fat tissue), is known as *Medōrōga* or *Sthoulya Rōga*. According to Ayurveda, obesity is covered in *Vruddhatraya* and *Laghutraya*. Major classical works like *Charaka Samhitā*, *Susruta Samhitā*, and *Ashtānga Hrdya Samhitā* are instances of *Vruddhatraya*.

According to *Charaka Āchārya*, consuming meals that are heavy, sweet, cooling, and unctuous, not exercising, refraining from sexual activity, sleeping all day, and genetic traits are the main reasons of obesity [7]. The following *Dhātus* (tissues) are afflicted by one of the seven diseases, such as carbuncles, fevers, fistulas in abscesses, and *Vātika* ailments, which cause poor vitality and eventual death, claims the *Susruta Samhitā* [8]. The creation of *Āma* (undigested food), in accordance with *Ashtānga Samgraha*, is brought on by a malfunction of the Agni, or digestive power. This interferes with the *Medō Dhātu's* Agni and inhibits the creation of new tissue [9]. All three of these minor ancient texts—*Sārangadhara Samhitā*, *Bhāvaprakāsha*, and *Mādhava Nidāna*—are included in the *Laghutraya*. *Mādhava Nidāna* defined obesity as the condition in which a person's breasts, buttocks, and abdomen begin to move during physical activity as a result of the accumulation of fat in particular bodily regions [10]. *Ācharya Sārangadhara* mentioned *Sthoulya* as a characteristic of the *Shleshma Prakruti* (mucous) [11]. *Bhāvamishra* gave greater weight to risk factors, morbidity, and other behavioral interventions [12]

2. Material and methods

The intended course of treatment was;

- *Haridrā Chūrna*-5 g
- *Thēja Patra Chūrna*-5 g

Before meals, take 10g (combination) twice daily with lukewarm water.

- *Yava* (barley), *Mineri* (millet), *Bada Inguru* (corn), and *Thiringu Piti* (wheat flour) are all considered *Pathya* (wholesome).

Apathya (Unwholesome)- *Dadhi* (curd), tea, fast meals, ghee, salt, and heavy foods are examples

3. Case report

- Religion- Buddhism
- Education-Higher
- Occupation-Teacher
- Marital status-not married

3.1. Complains of the patient

A female patient, age 30, with OPD number 2236 F, arrived at the *Gampaha Wikramaracchi* Ayurveda Teaching Hospital, *Yakkala*, at noon on June 2, 2023, complaining of *Sthoulya* (obesity), *Duarbalya* (debility), *Swasa Krichita* (breathlessness), *Ati-pipāsa* (excessive thirst) and *Ati-kshudha* (excessive eating)

3.2. History of present complain

A female patient in her 30s with obesity for 12 years tried numerous methods to stop losing weight without success. *Ayurvedic* hospital was contacted by the patient for additional and better treatment.

3.3. History of past illness

No history of past illness.

3.4. Family history

Mother and Father had hyperlipidemia

3.5. Personal history

The patient was vegetarian in diet. Takes 2 tea cups per day. Normal micturition. *Samyak Nidra* (normal sleep).

3.5.1. Dasha Vidha Parikshā

Prakruti (constitution) is *Kapha Pittaja*, *Vikruti*- *Kapha Vāta* (imbalanced *Kapha Vāta*), *Mēda Sara* (fatty tissue)-*Pravara*. *Samhanana* (superior body compactness) *Pravara*, *Pramāna* –*Madhyama*, *Sātmya*- *Madhyama*, *Satva* (good mental constitution)-*Pravara*, *Āhara Shakti* (moderate digestive power) *Madhyama*, *Vyāyāma Shakti* (less exercise power)-*Avara*, *Yuva* (young age)-30 yrs. Eight-fold examination known as *Ashta Vidha Parikshā*, *Nādi* (pulse)-normal, *Mutra* (urine)- normal, *Mala* (stool)- constipated, *Jihva* (tongue)- coated tongue, *Shabdha* (sounds)- adequate, *Sparsha* (touch)-normal, *Druk* (vision)- normal, *Akruti* (body frame)- obese built.

3.6. Vital examination

75 beats per minute of heart rate, regular, medium strength, 110/90 systolic and diastolic blood pressure, in the daytime in OPD, the body temperature was 98.5 F with a respiratory rate of 26 breaths per minute. Body weight 60kg, height-150cm, so BMI-26.66 kg/m²

3.6.1. Systemic examination

Consciousness-conscious, Nervous system, cardio vascular system, respiratory system are normal in function.

3.6.2. Assessment criteria

The *Sthaulya* (obesity) assessment standards that have been detailed in several *Ayurvedic* texts and utilized after some changes. The therapy outcomes were graded on a scale. Table 1 shows the severity grades for external dysphonia, excessive sweating, weakness, polyphagia, and polydipsia, which are 0, 1, 2, and 3. These criteria were evaluated by *Dharshana Parikshā* (inspection) and questions posed to the patient.

Table 1 *Sthaulya*'s subjective parameter evaluation ^[13]

Symptoms	0	1	2	3
External dysphonia	No dysphonia	Mild	Moderate	Severe
Excessive perspiration	No perspiration	Mild	Moderate	Severe
Weakness	No weakness	Mild	Moderate	Severe
Polyphagia	No polyphagia	Mild	Moderate	Severe
Polydipsia	No polydipsia	Mild	Moderate	Severe

This patient visited on June 2, 2023 and course of treatment is 30 days. The project was completed on July 2, 2023. Internal (oral) medication was prescribed, as stated in table 2.

Table 2 Drugs are used in the treatment plan

Drug	Botanical name
<i>Haridrā (Kaha)</i>	<i>Curcuma longa</i>
<i>Thējapatra (Tamāla Patra)</i>	<i>Cinnamomum tamala</i>

4. Results

The impact of *Ayurvedic* medicine on the subjective *Sthaulya* parameter changed from 15 to 9 to 5 to 2 throughout the course of 0 to 7 to 14 to 30 days. With 100% before treatment and 60%, 33.33%, and 13.33% of the lower sides emerging after 7, 14, and 30 days, respectively, the total points were 15. (Table 3).

Table 3 *Ayurvedic* medicines' impact on the subjective parameter [13]

symptoms	Before treatment	During treatment		After treatment 30 days
		7 days	14 days	
External dysphonia	3	1	0	0
Excessive perspiration	3	1	2	1
Weakness	3	2	0	0
Polyphagia	3	3	2	0
Polydipsia	3	2	1	1

In 7 days, 14 days, and eventually 30 days, the effect of *Ayurvedic* medication on the objective parameter of *Sthaulya* (obesity) varies from 60 kg weight to 59.7 kg to 59.1 kg to 58.9 kg, and from 26.66 to 26.53 to 26.26 to 26.17 in those same 7 days, 14 days, and 30 days. Additionally, the measurements are slightly reduced (Table 4).

Table 4 The effect of *Ayurvedic* drugs on objective parameter of *Sthaulya* [13]

Symptoms and measurements	Before treatment	During treatment		After treatment 30 days
		7 days	14 days	
Weight	60 kg	59.7 kg	59.1 kg	58.9 kg
BMI (kg/m ²)	26.66	26.53	26.26	26.17
Right mid arm circumference	27 cm	27 cm	26.5 cm	26.5 cm
Chest circumference	98 cm	98 cm	98 cm	98 cm
Abdomen circumference	95 cm	95 cm	95 cm	94.5 cm
Mid-thigh circumference	47 cm	47 cm	47 cm	47 cm
Leg circumference	31 cm	31 cm	30 cm	30 cm
Hip circumference	95 cm	95 cm	95 cm	94.5 cm
Waist circumference	92 cm	92 cm	92 cm	92 cm

5. Discussion

According to *Pancha Padārtha* analysis (Table 5), both plants share *Laghu* (light) *Rūksha* (dry) *Guna* (quality) as well as *Katu* (pungent) and *Tikta* (bitter) *Rasa* (taste). They are equally *Ushna* (hot), *Veerya* (potent), and *Katu Vipāka* (final flavor). Many *Ācharya* (teachers) believe that the *Lēkhana* (scraping) *Guna* found in *Katu Tikta* *Rasa* removes excess *Kapha* and *Mēdha* from the body. *Shōshana Guna*, which absorbs additional fluids and fat. According to examination of

Guna, the two *Gunās* that stand out the most are *Laghu* and *Rūksha*. These *Gunās* help to lessen *Kapha* and *Mēda* in cases of obesity. *Ushna* is the most notable *Veerya*, and *Ushna Veerya* helps to reduce obesity, according to *Veerya* study. Based on *Dōsha Karma*, *Katu Vipāka* is the most prominent according to a *Vipāka* analysis, and after the obstruction is eliminated, the blood flow returns to normal. *Tridōshahara*, *Kaphahara*, and *Vātahara Karma* (decrease bodily humors) are beneficial in the treatment of obesity. Therefore, two of the herbs that were chosen are efficient in the management of obesity, according to the study of *Pancha Padārtha* (five aspects of herbs). Walking and exercise increase fitness through restoring the body's normal metabolism, boosting *Dhātavagni*, and activating the *Medō Dhātu*. The fact that there was weight loss and a reduction in symptoms shows how successful the treatment was.

Table 5 *Ayurveda* properties of herbs

Herb	Rasa	Guna	Veerya	Vipāka	Dōsha karma
<i>Haridrā</i>	<i>Tikta, Katu</i>	<i>Laghu, Rūksha</i>	<i>Ushna</i>	<i>Katu</i>	<i>Thridōsha Hara</i>
<i>Thēja Patra</i>	<i>Katu, Tikta, Madhura</i>	<i>Laghu, Rūksha, Theekshana</i>	<i>Ushna</i>	<i>Katu</i>	<i>Kapha Vāta Shāmaka Pitta Vardhaka</i>

6. Conclusion

Sthaulya and obesity are connected. As numerous techniques are explained above, they are highly beneficial in reducing fat and resolving the obesity issue. In actuality, everyone has a unique physical nature, which means that different treatments will have different outcomes. *Sthaulya*, or obesity, may be reduced by using *Ayurvedic* medicine and according to the *Pathya Apathya* (wholesome and unwholesome) principles. However, additional research is required to corroborate these findings due to the limited sample size and brief timeframe.

Compliance with ethical standards

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Disclosure of conflict of interest

The authors declare no conflict of interest.

Statement of informed consent

Informed consent was obtained from individual participants included in the study.

References

- [1] Han TS, Tajar A, Lean ME. Obesity and weight management in the elderly. *British medical bulletin*. 2011 Mar 1; 97(1):169-96.
- [2] Bray GA, Heisel WE, Afshin A, et al. The Science of Obesity Management: An Endocrine Society Scientific Statement. *Endocr Rev*. 2018;39(2):79-132. doi:10.1210/er.2017-00253
- [3] Jayawardana, N. W., Jayalath, W. A., Madhujith, W. M., Ralapanawa, U., Jayasekera, R. S., Alagiyawanna, S. A., Kalupahana, N. S. (2017). Lifestyle factors associated with obesity in a cohort of males in the central province of Sri Lanka: a cross-sectional descriptive study. *BMC public health*, 2017, 17(1), 27
- [4] Kumar P, Clark M. *Clinical medicine*. 7th ed., 2009, p. 233-288.
- [5] Davidson S. *Davidson principles & Practice of Medicine*. 21st ed., 2010, p. 20-116.
- [6] Bray GA. Medical consequences of obesity. *The Journal of Clinical Endocrinology & Metabolism*. 2004 Jun 1; 89(6):2583-9.
- [7] Sharma RK. *Charaka Samhita*, Volume I, Chaukhamba Orientalis, Sanskrit series office: 2005, p. 375.
- [8] Sharma PV. *Susruta Samhita*, Volume I, Chaukhamba Orientalis, Varanasi: 2010, p. 4-170.

- [9] Srikantha Murthy KR. Ashtangahrdayam, Chowkhambhakrinadas Academy, Varanasi, India: 2009, p. 123.
- [10] Murthy KR. Madhava Nidana. 7th ed., Chaukhamba Orientalis: 2005, p. 121.
- [11] Srikantha Murthy KR. Sarangadhara Samhita, 6th ed., Chaukhamba Orientalis, Varanasi:1984, p. 37.
- [12] Srikantha Murthy KR. Bhavaprakasha, 1st ed., Volume 2, Chowkhambhakrinadas Academy, Varanasi, India: 2009, p. 12-502.
- [13] Sewwandi SLG, Rupasinghe SAMR , Kumara AAJP, et al. Case study on herbal formula in the management of Sthaulya (overweight and obesity), 2023;10(4):43-4