

PILOT STUDY TO EVALUATE THE EFFECT OF KALABHOJANAM IN STHOULYA

Priyanka Sharma^{1*}, Avadhesh Kumar², Ruby Rani Aggarwal³ and Sanjay Kumar
Tripathi⁴

¹Ph.D. Scholar Department of Swasthavritta and Yoga U.A.U Gurukul Campus, Haridwar,
Uttarakhand, India.

²Professor and Head, Dept. of Swasthavritta and Yoga U.A.U. Gurukul Campus, Haridwar,
Uttarakhand, India.

³Professor and Head, Department of Rog Nidan and Vikriti Vigyan U.A.U Rishikul Campus,
Haridwar, Uttarakhand, India.

⁴Professor, Department of Kaya Chikitsa U.A.U. Rishikul Campus, Haridwar, Uttarakhand.

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***Corresponding Author**

Priyanka Sharma

Ph.D. Scholar Department
of Swasthavritta and Yoga
U.A.U Gurukul Campus,
Haridwar, Uttarakhand,
India.

ABSTRACT

Present era is of modernization, science and technology development. This development resulted into storms of lifestyle disorders due to change in dietary habits and mode of lifestyle. World Health Organization (WHO) proclaimed obesity as global epidemic, coining the term “globesity.” India is next to only china.^[1] in global highest prevalence rate of Obesity. Obesity can be correlated with Sthoulya or Medoroga in ayurveda. The first line of treatment in any disease is Nidan Pariwarjan. Ajirnashan and Adhyashan are main nidana for Sthaulya hence avoiding Ajirnashan and adopting Jirnashan may be an ideal approach in managing Sthaulya. Jirnashan also termed as Kalavat bhojan, is one of the fundamental guidelines for ahara consumption that are outlined in Ayurvedic literature. kalabhojan and pathya ahara are age old golden ayurvedic principles that can serve ideal dietary management for sthoulya (Obesity). To clinically prove effect of

kalabhojana in sthoulya present pilot study was planned on 12 patients. A one-month diet and lifestyle modification treatment plan were suggested to all patients following jirnasana i.e Patients advocated to have to only dwikalabhojana with first meal between 9 to 10 am followed by second around 6 to 8 pm, only after observing jirna ahar lakhsan. The subjects

were assessed by specific proforma including demographic profile, constitutional profiles, clinical profile, subjective and anthropometric parameter. The study shows there was a substantial positive difference in all parameters.

KEYWORDS: Kalabhojan, Jirnasana, Pathya, Sthoulya.

INTRODUCTION

Since the Vedic period, healthy and long life has been praised. Body must be maintained, otherwise man can't be healthy. Charakacharya described the features of healthy body, having equal distribution of Mamsa (Muscular tissue) and properly distributed buildup. But now day, majority of people are not in Sama Samhanana (Well distributed body builds up). Overweighing and Obesity is the chief complaint of the man of present era. Obesity is a chronic disease that is highly prevalent and that poses a serious risk for the development of diabetes mellitus, hypertension, cardio vascular diseases, musculoskeletal disorders especially osteoarthritis and^[2,3] Obesity is linked to cancer, with India's cases expected to rise from 14.6 lakh in 2022 to 15.7 lakh by 2025. The definition of overweight and obesity is based on BMI. In general, BMI for adults, as per WHO, ranging from 18.5 to 25 Kg/M² is considered to be normal. However, for Asians it is recommended that the BMI should be between 18.5 to 23Kg/M², since, they tend to have higher percentage body fat even at a given BMI compared to Caucasians and Europeans, which leaves them at a higher risk of NCDs. Overweight: BMI ranging over 23 to 27.5 Kg/M² is defined as overweight as per Asian cut-offs. Over 31% of urban and 16% of rural adults are overweight (NNMB).

'Kala' is the most powerful and it affects all the 'Bhavapadarthas'. Ayurveda believes in two aspects of Kala, Nityaga and Avasthika (Ca. Vi. 1/21). The former is used in general sense and in relation to seasonal variations, while the latter is meant for a 'stage' and used in relation to diseases. In general, irrespective of Rtu, some points have their importance always, like 'Jirne', Proper time for meals is always after the digestion of previous meals - i.e. 'Kala Bhojanam', which is most important for the health. All the classics, including Vedas, have mentioned two Kalas for meals, viz. Pratah Kala and Sayah kal (Morning and Evening period). Susruta had indicated two Kalas for Samagni, while only one for Durbala Agni. Thus, Kala is a dependent factor on the condition of Agni. It can be evaluated from the symptoms of Jirna Ahara, mentioned earlier. The time taken for digestion is different in different people, depending upon their Prakrti, Ahara, Matra, Rtu, psychological conditions, etc. Everyone can not think and decide the perfect time considering all the above factors, but

one can easily decide the 'Jirna' stage of food. Hence Acarya had included jirnasana term in the Ahara Vidhi Vidhana.

Need of study: Sthoulya Chikitsa is elaborated in ancient text, under the context of Shodhan Chikitsa and Shaman Chikitsa. All these treatments are considered under Apatarpan Chikitsa (Reduction therapy) which has its own importance in reducing obesity. But still the problem persists because of sedentary life style and wrong food habits. If the management of obesity is carried out with Apatarpan Chikitsa along with adopting healthy eating habits i.e. kalabhajan (Jirnashana /After digestion of previously consumed food), the result would be much more encouraging with minimal relapse. Charaka emphasizes on Jirnashana as a line of treatment in Santarpanjanya Vyadhi (Diseases due to over consumption of food and sedentary life style) including Santarpanjanya Vyadhi. Hence present pilot study planned on 12 patients of sthoulya study showed encouraging results of Jirnashana in the reduction of weight, skin fold thickness, body circumference, and associated signs and symptoms

AIMS AND OBJECTIVES

- To evaluate the efficacy of kalabhajan (Jirnashana) in the management of obesity.
- To collect literature on kalabhajan (Jirnashana) in Sthoulya management from Ayurveda and modern.

MATERIALS AND METHODS

Clinical study Source of Data: A total of 12 Patients of either sex of age group 20-60 years were randomly selected from OPD of kayachikitsa and swastharakhsan Rishikul campus UAU Haridwar.

Selection of patients

A. Inclusion criteria

- Age groups from 20-60 years of either sex were selected for the study.
- Patients having cardinal features of obesity were selected.
- Patients having a BMI of 25 to 40 kg/m² were included in this present study.

B. Exclusion criteria

- Age below 20 years & above 60 years of age was excluded from the study.
- Patients receiving drugs like steroids and antidepressants etc were excluded from the study.

- Obesity due to any endocrinal disorders like Cushing syndrome, hypothyroidism, etc. was excluded.
- Patients having BMI below 25 kg/m² and more than 40 kg/m² were not considered.

C. Discontinuation criteria

- Parents are not willing to continue.
- During the clinical trial, if a patient develops any serious condition which requires urgent treatment.
- A patient her/his self wants to withdraw from the clinical trial.

D. Protocol of research

The patient's consent is obtained after making him/her aware of the merits or demerits of the diet strategy along with the proposed trial duration.

- Fulfillment of inclusion criteria.
- Registration of obese patients.
- Investigations mentioned were advised to her/ him before presenting starting trial.

Therapeutic Intervention /kalabhohanam vidhi: A one-month diet and lifestyle modification treatment plan were suggested to all patients. Patients advocated to have to only dwikalabhajana with first meal between 9 to 10 am followed by second around 6 to 8 pm, only after observing jirna ahar lakhsan. Second meal should be only after patient had observe atleast 5 jirna aahar lakshan from following samyakjirnalakshan mentioned by bhavprakash:

1. Udgara Sudhi (Clear belching)
2. Utsaha (Enthusiasm/ Active for daily routine work)
3. Vegotsargayatohita (Proper evacuation of bowels)
4. Laghuta (Feeling of lightness)
5. Kshut (Proper hunger)
6. Pipasa (Proper thirst)

Patients were pathya apthya chart including instruction for Matravat Ahara (Leaving 1/3 capacity of Kukshi empty) i.e. reduce or cutoff 1/3rd of total diet or diet taken up to satisfaction. Assuming stomach capacity (Diet up to satisfaction) in 3 parts, patients were directed to take 1/3rd liquid, 1/3rd solid and leave 1/3rd empty. Subjects were also made to limit the use of unhealthy foods. They were advocated to decrease the use of energy rich foods like fried foods and bakery products. All the subjects were advised to avoid overeating,

repeated eating and day sleeping. All the subjects were advised to take Laghu and Pathya Ahara, drink lukewarm water and avoid refrigerated water and all addiction. Black tea or green tea should be consumed in between the meals and buttermilk once a day in the afternoon was advised. Compliance to treatment was noted by observing weekly patient food diary. Only patient complete adherence to kaalbhojan were included in the study.

Duration: 30 Days

Statistical Analysis: All the results were calculated by using Software SPSS. For score variables Wilcoxon signed-rank test was used while for continuous variables Paired t-Test was used and results were calculated.

OBSERVATION AND RESULT

A total of 15 subjects were registered. Among which 12 completed the study while rest discontinued due to various reasons. Observation of present study are as.

Age: Maximum number of patients 65 % were belongs to 20-40 years, and 35 % belong to the age group 41-60 years in the study. In this study, obesity is more common in middle age adults due to a sedentary lifestyle and fast food habits.

Sex: Female predominance was evident in the study (70 % of patients were female, and 30 % of patients were male.)

Religion: The majority of the population i.e., 80 % of patients were Hindu in the study, Muslim community at 1 %, followed by other communities at 1 % in the study. Tis may be due to more hindu population in Haridwar.

Socio-Economic status: A maximum of 25% of patients were from rich status, 20% of patients were from upper middle status in the study, 40% of patients were from middle status, and 15% of patients were from lower middle status in the study.

Habitat: 70% of patients were from the urban area in both groups while 30% of patients belong to rural habitat in this study. Urban peoples had more easy access to harmful foods.

Dietary habits: Both ajirnasana adhyasana dietary habits have the same contribution 75% to obesity in the study.

Dosha: In this study, 70% of patients had Pitta Kapha and 30% of patients had Vata Kapha which shows Kapha predominancy in Sthoulya.

Satva: Satva was of Pravara type in 40% of patients in respectively, while it was Madhyama type in 50% and of patients found 10% Avara type Satva respectively in the study.

Ahara shakti: 30% of patients had Madhyam Ahara Shakti, 60% of patients had Pravara Ahara Shakti, and 20% of patients had Pravara Ahara Shakti in the study.

Jarana shakti: In the study, 10% of patients had Avara Jarana Shakti, 23 % of patients had Madhyam Jarana Shakti and 67 % of patients had Pravara Jarana Shakti.

Vyayama shakti: 70 % of patients had Avara Vyayama and 30% of patients had Madhyam Vyayama in the study. It proves role of Avyayamam in the occurrence of Sthoulya. Obesity is mostly caused by a lack of physical activity. This assertion is validated by both ancient and modern medical knowledge.

Agni: 40% of patients had Tikshna Agni, 30% of patients had Sama Agni in this study and 30% of patients had Vishama Agni. Medoroga patients had an increased Jatharagni, which leads to increased food

Kostha: In the study, 70% of patients had Madhyam Kostha, and 30% of patients had Mridu Kostha. Here most of the patients had Madhyam Kostha, which is due to the Kapha dominancy, evidently showing kapha role in obesity

Nidra: 65 % of patients had Atinidra and 35 % of patients had Samyak Nidra in the study. Excess sleep is one of the main reasons for obesity, as it produces Kapha Prakopa and increases the Meda Dhatu, therefore acting as an etiological factor.

Duration: 70% of patients had a 0 to 18 months duration of disease, and 30% of patients had a 19 to 36 months duration of disease. World health organization has listed obesity as a diet-related chronic disease.

RESULTS

Willcoxon Signed Rank test shows a statistically significant outcome. of treatment for *Alasya / Utsahahani, Kshudra Swasa/ Ayasena Swasa, Daurbalya, Angagaurava, Daurgandhya, Swedadhikya, Atikshudha, and Ati Pipasa.*

Paired t-test shows a statistically significant outcome of study in weight loss, BMI, and SFT triceps, while not significant in WHR, SFT suprailic.

Subjective parameters				
S. No	Variable	Test statistics	p-value	Remarks
1	<i>Alasya / Utsahahani</i>	12	0.00222.	S
2	<i>KshudraSwasa/ AyasenaSwasa</i>	12	0.00222	S
3	<i>Daurbalya</i>	12	0.00222	S
4	<i>Angagaurava</i>	12	.00222	S
5	<i>Daurgandhya</i>	12	.00222	S
6	<i>Swedadhikya</i>	12	0.00222	S
7	<i>Nidraadhikya</i>	12	.00512	S
8	<i>Atikshudha</i>	12	.00222	S
9	<i>AtiPipasa</i>	12	.00222	S

Objective parameters					
S. No	Variable	Mean difference	Test Statistics	p-value	Remarks
1	Weight	1.75	12	0.00003	S
2	BMI	1.02	12	0.00085	S
3	WHR	0.05	12	.05618	NS
4	SFT Supra Illiac	0.21	12	.07563	NS
5	SFT Triceps	0.14	12	.02145	S

no. of Patients	Alasya / Utsahahani		Kshudraswa/ ayasenaswasa		Daurbalya		Angagaurava		Daurgandhya		Swedadhikya		Nidraadhikya		Atikshudha		Atipipasa	
	BF	AF	BF	AF	BF	AF	BF	AF	BF	AF	BF	AF	BF	AF	BF	AF	BF	AF
1	4	1	3	1	2	1	3	1	1	0	1	0	3	1	3	1	3	2
2	4	2	3	0	2	1	2	0	1	0	2	0	3	1	3	2	2	1
3	3	1	2	1	1	0	3	1	3	2	3	0	2	1	4	1	3	1
4	2	1	1	0	2	1	3	0	2	1	2	0	3	2	2	1	2	1
5	3	1	2	1	2	1	2	0	2	1	2	1	2	0	3	1	3	2
6	2	1	2	1	3	2	3	1	3	1	1	0	3	1	4	2	2	1
7	4	1	2	1	3	1	2	1	1	0	1	0	3	1	2	1	2	1
8	3	1	1	0	2	1	3	2	2	0	2	1	2	2	3	1	1	0
9	4	0	2	0	1	0	3	1	1	0	3	2	2	1	3	1	1	0
10	3	1	2	1	3	2	2	1	1	0	2	0	1	1	3	1	3	0
11	4	2	2	1	3	2	3	1	1	0	3	0	2	0	3	1	3	2
12	4	1	3	1	2	1	2	0	1	0	2	1	3	2	4	1	2	1

DISCUSSION

The first line of treatment in any disease is Nidan Pariwarjan (Avoiding causative factors). As Ajirhashan is main cause for all Santarpanjanya diseases like in Sthaulya. hence avoiding Ajirhashan and adopting Jirhashan may be an ideal approach in managing Sthaulya.^[4] This is substantiated by the Charaka in context of Sthaulya treatment emphasizing on Jirhashan which is considered as a part of treatment of Sthaulya. Jirhashan provide time for proper digestion, increase agni for next meal, Samyak dhatu upchay and dosa samavastha. Maharshi Charaka & Vagbhata believed Kalabhojana as one of the most important factor to maintain the health. Even the proper quantity of meal one should intake also depends on kala (quantity of meal that doesn't disturb prakriti and only digested in due time only consider as proper amount to maintain health). Acharya Charaka's significant Ahara parinamkara bhavas is Kala (time). With time digestion improves and the vital function of Kalavat bhojan is to keep Agni (digestive fire) activated.^[5] Acharya Bhavprakash, also emphasise on eating meal in the morning and in the evening, nothing should be consumed in between the two meals.^[6] Proper time should be maintained between meals to allow the body to digest and absorb the food. Summering all if sthoulya patients follow kalbhojan/jirhashana or eat only twice as in present study, medodhtuvagni will become sama resulting in samayak formation of meda dhatu. and all complication due to excess meda will consequently fade away.

“Periodic fasting for medical and religious reasons has been practiced since prehistoric times. Because of the tight interaction between the circadian clock and metabolism, meal timing is an important factor to maintain healthy metabolism. Dietary approaches based on meal timing are a promising strategy for the modulation of circadian rhythms and clock-controlled metabolic functions in humans.^[7] It is compatible with autophagy, a method for clearing out cellular debris that has accumulated over time. There are two basic types of fat in the body: Fatty acids, are a type of free fat that is used as fuel in the bloodstream. Triglycerides, which are a kind of fat that is stored and kept in fat cells. Triglycerides get "locked" inside the fat cell because they are unable to pass through cell walls and they can only be released after being stored inside by being converted into fatty acids. Therefore, if the objective is to lose weight, we must lessen the quantity of fat that is permanently deposited as triglycerides in the fat cells. Our bodies receive a set amount of time between meals as a result of Dwikala bhojan/jirnasaniyat, and during this time, they burn stored triglycerides for energy.

CONCLUSION

Kala Bhojan combined with Pathya Ahara is useful in reducing Sthaulya. For the long-term effectiveness of treating Sthaulya, more research and scientific evidence with extended follow-up is required.

Declaration of patient consent the patient has given his approval for the authors to report the case and other clinical information in the journal, the authors declare that they have gotten patient consent forms.

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Conflicts of interest

There are no conflicts of interest.

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