
**“STANDARDISATION OF SERVING SIZE OF
PEYADI SAMSAJANA KRAMA AND ITS IMPACT
AGAINST REGULAR SERVING SIZE – A QUASI
RANDOMISED CONTROL TRIAL”**

**Thesis Submitted to
KLE ACADEMY OF HIGHER EDUCATION AND RESEARCH
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**For the award of the degree of
Doctor of Philosophy
In the Faculty of Ayurveda
(SWASTHAVRITTA & YOGA)**

By

Dr. SANDEEP S SAGARE M.D (Ayu)
(Registration No: KLEU/Ph.D/ D01217005)

Under the Guidance of

Dr. ASHOK PATIL M.D.(Ayu), Ph.D
**Prof & Head, Dept of Swasthavritta & Yoga
KAHER's Shri. B.M.K. Ayurveda Mahavidyalaya, Belagavi.**

**KAHER's SHRI. B. M. KANKANAWADI AYURVEDA
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Part-Time Ph.D. Scholar, 2017-18 Batch
KLE Shri. B. M. K. Ayurveda Mahavidyalaya,
Faculty of Ayurveda, KAHER
Belagavi.

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1. The Principal, KLE Shri. B.M. K. Ayurveda Mahavidyalaya, Belagavi.
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Name of Research Scholar

Dr. SANDEEP S SAGARE MD (Ayu)

Part -Time Ph.D Research Scholar
KAHER's Shri. B. M. Kankanawadi
Ayurveda Mahavidyalaya, Shahapur,
Belagavi.

Place: Belagavi

Date:

Signature

Name & Designation of Research Guide

Dr. ASHOK PATIL MD. (Ayu), Ph.D

Professor & Head,
Dept of Swasthavritta and Yoga
KAHER's Shri. B. M. Kankanawadi
Ayurveda Mahavidyalaya, Shahapur,
Belagavi.

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Place: Belagavi

Date:

Signature

Name & Address of the Research Scholar

Dr. SANDEEP S SAGARE M.D (Ayu)

Part - Time Ph.D Research Scholar

Faculty of Ayurveda (Swasthavritta & Yoga)

KAHER's Shri. B. M. Kankanawadi Ayurveda

Mahavidyalaya, Shahapur, Belagavi.

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Place: Belagavi

Date:

Signature

Name & Address of Dean

Dr. BASAVARAJ R TUBAKI_{M.D, Ph.D, VSF}

Dean, Faculty of Ayurveda

KAHER, Belagavi.

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Place: Belagavi

Date:

Signature

Dr. SUHAS KUMAR SHETTY M.D (Ayu), Ph.D

Principal

KAHER's Shri. B. M. Kankanawadi

Ayurveda Mahavidyalaya, Shahapur, Belagavi.

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Place: Belagavi

Date:

Signature

Dr. ASHOK PATIL M.D (Ayu), Ph.D,

Professor and Head,

Department of Swasthavritta and Yoga,

KAHER's Shri. B.M.Kankanwadi Ayurveda

Mahavidyalaya, Shahapur, Belagavi.

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Date:

Place: Belagavi

Dr. Sandeep S Sagare

LIST OF ABBREVIATIONS USED

SK	<i>Samarjana Krama</i>
PS	<i>Pravara Shuddhi</i>
MS	<i>Madhyama Shuddhi</i>
AS	<i>Avara Shuddhi</i>
DP	<i>Deha Pramana</i>
AB	<i>Agni Bala</i>
TA	<i>Tikshna Agni</i>
SA	<i>Samagni</i>
MA	<i>Mandagni</i>
ADP	<i>Avara Deha Pramana</i>
MDP	<i>Madhyama Deha Pramana</i>
PDP	<i>Pravara Deha Pramana</i>
MS	<i>Madhyama Shudhi</i>
KY	<i>Krita yusha</i>
AKY	<i>Akrita yusha</i>
KMR	<i>Krita Mamsarasa</i>
AMR	<i>Akrita Mamsarasa</i>
SSS	Standardized Serving Size
RSS	Regular Serving Size
HCl	Hydrochloric Acid

CS	<i>Charaka Samhita</i>
SS	<i>Sushruta Samhita</i>
AH	<i>Ashtanga Hridaya</i>
MN	<i>Madhava nidana</i>
BP	<i>Bhava prakasha</i>
AS	<i>Ashtanga sangraha</i>
YR	<i>Yoga Ratnakara</i>
VS	<i>Vanga sena</i>

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ABSTRACT

Background: *Ayurveda*, an ancient holistic health system, underscores personalized well-being through tailored approaches to health and disease. The post *Vamana-Virechana* procedures are vital in *Ayurvedic* detox, promoting balance and toxin elimination. *Peyadi Samsarjana Krama*, a recognized *Ayurvedic* formulation, shows promise in supporting post *Vamana-Virechana*. However, the use of standardized serving sizes is still an area requiring exploration and research.

Aim and objectives: To establish a uniform serving size for *Peyadi Samsarjana Krama* based on *deha pramana* (body frame) and *agni bala* (digestive capacity). To assess the impact of the standardized serving size compared to the conventional serving size of *Peyadi Samsarjana Krama*.

Material and methods: The study, conducted at KLE Ayurveda Hospital & Medical Research Centre in Karnataka, included 240 individuals undergoing *Vamana/Virechana* with *Madhyama Shudhi*. Using computer-generated randomization, subjects were divided into two groups: the control group (Group 1) received the regular serving of *Samsarjana Karma*, and the study group (Group 2) received the standardized serving, each group comprising 120 subjects.

Results: In both groups, subjective parameters such as headache, hunger, giddiness, and lethargy were assessed. In Group 1, 58% experienced headaches on the first day morning, while in Group 2, 93-96% were headache-free at both times. Lethargy was present in 47.9% in Group 1 on day 5 evening, while Group 2 had 73.6% to 96.7% without lethargy on all 5 days. In Group 1, more than 45% experienced severe cravings in the morning on Days 1 and 5, and over 47% in the evening, while Group 2

had over 90% with no complaints. Mild giddiness affected 44.5% of Group 1 in the morning, but none in Group 2. Lethargy was observed in 47.9% of Group 1 on Day 5, whereas Group 2 showed no lethargy in most subjects (73.6%-96.7%) across all days. Results were statistically significant. Statistically significant results were obtained. FBS and RBS levels were higher ($B = 1.44$) in the Standardized Serving Size, significantly so ($B = 4.37$, $p < 0.05$) compared to the regular serving size.

Conclusion: The study group (Group 2), which received the standardized serving of *Samsarjana Karma*, demonstrated greater effectiveness and better tolerance compared to the control group (Group 1).

Keywords: *Vamana-Virechana, Peyadi Samsarjana Karma, Madhyama Shudhi.*

INTRODUCTION

The term "*Panchkarma*" denotes a set of five therapeutic processes within *Ayurveda*, specifically aimed at internally purifying the body by expelling accumulated morbid *Dosha* through the most accessible route. There are five purificatory procedures known under *Panchakarma* viz. *Vamana* (Therapeutic Emesis), *Virechana* (Therapeutic Purgation), *Basti* (Trans-rectal drug administration), *Nasya* (Trans-nasal drug administration) & *Raktamokshana* (Bloodletting therapy).

According to *Ayurveda* principles, maintaining health involves achieving a balance of *Dosha*, *Dhatu*, *Jatharagni*, and ensuring the proper elimination of *Mala* through defecation.¹ Individual requirement may vary as per *Deha Pramana* and *agni*. At present fixed serving size is in practice, which is resulting in Hypoglycaemia, Head ache, General weakness, Craving for food, Fullness of Abdomen, Indigestion etc. There is need to standardise the serving dose in accordance with body frame and digestive power.

Vamana & *Virechana* are most widely used therapies. Post *Panchakarma* procedure to restore the strength of *Agni* a special diet schedule is to be followed which is known as *Samsarjana Karma*.¹

The term "*Samsarjana Krama*" is derived from three distinct words. "*Sam*" is a prefix meaning "best" or "proper," and "*Sarjana*" signifies upgrading, increasing. "*Krama*" denotes a sequence, proper order, or step. According to M. Monier Willums' dictionary, "*Samyak*" translates to proper or in a good way, and "*Krama*" denotes order. Consequently, *Samsarjana Krama* can be understood as a series of dietary practices aimed at enhancement or an ordered approach to dietary increase. It's noteworthy that the classical *Ayurveda* texts don't explicitly mention the term

"Samsarjana." The term is introduced by *Chakrapani*, a commentator, in his commentary on *Charaka Samhita*.²

We don't find any specific definition for *Samsarjana Krama* by *Acharyas*, we can briefly describe it as a set of strict and well-defined dietary regimens intended for individuals to restore disturbed or manda *Agni* to normalcy after undergoing vamana / virechana therapies.³ *Ayurvedic* texts give explanation of various methods of *Samsarjana Krama*, which include *Peyadi Samsarjana Krama*,⁴ *Tarpanadi Samsarjana Krama*,⁵ and *Rasa Samsarjana Krama*.⁶

The *Jatharagni* is one of the most important type of *agni* which plays a vital role in sustaining *Oja* and life, if any disturbance in its function can lead to the onset of diseases. Following *Panchakarma*, particularly *Vamana* and *Virechana*, the *Jatharagni* becomes disrupted and weakened, potentially causing a decline in the patient's strength. It is not advisable to immediately resume a regular diet during this diminished state of *Jatharagni* post-Samshodhana. Instead, a specific dietary regimen known as *Samsarjana Krama* is implemented. This involves a gradual reintroduction of food, progressing from light (*Laghu*) to heavy (*Guru*) *Aahara* in accordance with *Shudhi*. This step-by-step approach aims to enhance *Jatharagni* (digestive power), provide systematic nourishment to the patient, and facilitate adaptability across all systems of the body. If the patient fails to adhere to proper precautions and a regulated diet, it can result in various complications. To prevent these complications following *Samshodhana Karma*, the *Samsarjana Krama* is crucial and advantageous. *Acharaya Charaka* emphasizes the significance of *Agni* in *Samsarjana Karma* with an analogy: just as a small (external) *Jatharagni*, when kindled progressively with substances like grass and cow dung, becomes robust and steady, similarly, in the case of *Jatharagni* after *Vamana* and *Virechana Karma*, the *Peyadi Krama* enables *Jatharagni* to efficiently digest all kinds of food.⁷

Samsarjana Krama and *Karma* denotes a specific numbering sequence that must be adhered to. *Peya*, a more liquid substance with lower carbohydrate content, is easily digestible. In contrast, *Vilepi*, a semi-solid preparation, has a thicker consistency and includes rice particles, resulting in higher carbohydrate content. *Yusha*, a green gram soup, is prepared in the *Akrita* form without the addition of salt and *Ghrita*, while in the *Krita* form, salt and *Ghrita* are included, providing simple vegetable proteins. Meat or *Mamsarasa*, a mutton soup, is prepared in the *Akrita* form for simpler proteins, while the *Krita Mamsarasa* contains complex proteins such as animal proteins and fats. *Rasa Samsarjana Krama* is typically employed following *Peyadi Samsarjana Krama*. *Tarpanadi Krama* is used for the *Tarapana* of the patient, aiming to nourish the *Dhatu* of the *Samshodhita Purusha* (an individual who has undergone *Vamana* and *Virechana*).^{4,5}

The consumption of *Peyadi Samsarjana Krama* aim to optimize digestive functions, enhances metabolic processes, and promote overall rejuvenation following the cleansing procedures. To advance our understanding of the therapeutic efficacy of *Peyadi Samsarjana Krama* in post *Vamana-Virechana* protocols, a Quasi-Randomized Control Trial has been designed. In this study try to find or investigate the influence of a standardized and regular serving size of *Peyadi Samsarjana Krama* on key health parameters, including digestive function, metabolic balance, and overall well-being. The trial aims to provide valuable insights into the potential benefits of consistent dosing, offering a foundation for refining *Ayurvedic* post-detoxification practices and enhancing the holistic care of individuals undergoing these traditional therapies. Through a rigorous and scientific approach, this research endeavors to contribute to the evidence-based integration of *Ayurvedic* principles into contemporary healthcare practices.

BACKGROUND

Panchakarma, a cornerstone of *Ayurvedic* medicine, is a comprehensive purificatory procedure aimed at detoxifying the body.⁸ Among its various therapies, *Vamana* (therapeutic emesis) and *Virechana* (therapeutic purgation) are prominently used to expel toxins and restore health⁹. Following these intense detoxification processes, it is imperative to gradually reintroduce food through a specific dietary regimen known as *Samsarjana Krama* (SK).¹⁰ This regimen helps to slowly transition the digestive system from an empty state to normal dietary intake, thereby restoring and strengthening digestive power (*Agni Bala*).¹¹

The duration of *Samsarjana Krama* varies based on the extent of detoxification achieved, categorized into three levels: *Pravara Shuddhi* (extensive purification), *Madhyama Shuddhi* (moderate purification), and *Avara Shuddhi* (mild purification). Correspondingly, the dietary regimen lasts 7 days, 5 days, and 3 days, respectively. Despite these differences, the traditional practice maintains a constant number of two servings per day across all levels of purification.¹²

Key factors in determining the appropriate diet during *Samsarjana Krama* are *Deha Pramana* (body frame) and *Agni Bala* (digestive capacity).¹³ Clinical observations indicate significant variability in dietary needs based on these factors.¹⁴ For instance, individuals with *Pravara Deha Pramana* (large body frame) and *Tikshna Agni* (fast digestive fire) often require larger quantities and possibly more than two servings of food per day.¹⁵ Conversely, those with *Avara Deha Pramana* (small body frame) and *Manda Agni* (slow digestive fire) may need much smaller quantities and fewer servings.¹⁶

However, current practices in many *Ayurveda* hospitals do not account for these individual differences¹⁷. Fixed serving sizes, typically two servings per day, are administered regardless of the patient's *Deha Pramana* and *Agni Bala*.¹⁸ This one-size-fits-all approach has led to various complaints among patients, including headaches, food cravings, flatulence, giddiness, aversion to food, exhaustion, epigastric burning sensation, and abdominal heaviness.¹⁹ These issues highlight the inadequacy of the fixed serving size regimen in catering to individual patient needs.²⁰

To address these challenges, there is a critical need to standardize the serving sizes of *Peyadi Samsarjana Krama* based on *Deha Pramana* and *Agni Bala*, particularly in patients undergoing *Madhyama Shuddhi* (moderate purification).²¹ By tailoring the diet to individual body frames and digestive capacities, it is possible to enhance patient outcomes, reduce complaints, and ensure a smoother transition to normal dietary practices.²²

This study aims to: Standardize the serving size of *Peyadi Samsarjana Krama* according to *Deha Pramana* (body frame) and *Agni Bala* (digestive capacity). Evaluate the effects of standardized serving sizes against the regular fixed serving size regimen practiced at KLE Ayurveda Hospital. By systematically addressing these objectives, the study seeks to improve the effectiveness of *Samsarjana Krama*, ensuring that it meets the personalized dietary needs of patients following *Panchakarma* therapy.²³

AIM & OBJECTIVES AND HYPOTHESIS

Research Question

Whether the standardized serving size of Peyadi Samsarjana Krama has better results than the regular serving size based on deha pramana and agni bala ?

Objectives:

1. To standardise the serving size of *Peyadi Samsarjana Krama* in accordance with *deha pramana* (Body frame) & *agni bala* (Digestive capacity)
2. To evaluate the effect of standardised serving size of *Peyadi Sansarjana Krama* against regular serving size

Hypothesis

Alternate Hypothesis: There is a difference in untoward effects produced due to Standardised serving size of *Peyadi Samsarjana Krama* compared to regular *Samsarjana Krama* practice.

Null Hypothesis: There is no difference in untoward effects produced due to standardised serving size of *Peyadi Samsarjana Krama* versus regular *Samsarjana Krama* practice.

REVIEW OF LITERATURE

SAMSARJANA KRAMA:

After undergoing the *Vamana* (therapeutic vomiting) and *Virechana Karma* (therapeutic purgation) as part of the *Panchakarma* treatment, a graduated and specific diet plan known as *Samsarjana Krama* is advised. This dietary regimen is recommended for the transitional period until the patient is ready to resume their normal diet. It is designed to support the body's recovery and help in the restoration of digestive strength after the intense cleansing procedures of *Panchakarma*.^{24,27} After completing *Panchakarma*, a detoxification and rejuvenation program, to restore the body's digestive and metabolic capacity, it is recommended to follow *Samsarjana Krama*. This gradual reintroduction of food helps to increase *Agni*, the digestive fire, allowing the body to digest food efficiently, akin to how a spark of fire rapidly incinerates grass and cow dung.²⁵ It is well understood that according to *Ayurveda*, the *Doshas*, which govern the body's vital activities, can lead to various diseases if they become imbalanced or vitiated. Therefore, when these vitiated *Doshas* are effectively eliminated through *Panchakarma's* traditional detoxification and rejuvenation methods, they undergo a delicate phase as they strive to return to a state of equilibrium and normalcy. During this critical transition period, the *Agni*, or digestive fire, which is interdependent with the *Doshas*, may become compromised. It's important to note that during this phase, consuming a regular diet could potentially hinder the *Agni*, leading to disturbances in the normal processes of *Dosha* formation and overall well-being. The method of *Samsarjana Krama* is advised based on three types of *Shudhis*, namely *jaghanya*, *madhyama*, and *avara*, and the *matra* of *shodhita dravya* in *Prasthanas*. These *Shudhis* refer to different levels of purification. The number of servings is adjusted according to the changes in the number of *vegans*. The

following tables will provide detailed clarification on the types of *shudhis* and the corresponding number of *vegas*.²⁶

Table No. 01 Types of *shudhis* and the corresponding number of *vegas*

Purification	Vegas		Matra (Prastha)		Days	Annakala
	Vamana	Virechana	Vamana	Virechana		
<i>Jaghanya</i>	4	10	1	2	3	4
<i>Madhyama</i>	6	20	1.5	3	5	8
<i>Avara</i>	8	30	2	4	7	12

For optimal purification, the following schedule is recommended based on the *Shuddhi Prakara* (degree of purification): *Pravara Shudhi*, involving purifying three times a day with the same food; *Madhyama Shudhi*, purifying twice a day with the same food; and *Avara Shudhi*, purifying once a day with the same food.²⁸ Following *Samyaka Shudhi*, *Samsarjana Krama* may be started on the same day. If a little vitiation i. e. *Aushadhi* is remained inside, *Samsarjana Krama* should be initiated from the next day.¹⁰¹

After completing the *Pravara*, *Madhyama*, and *Avara Shuddhi* rituals, it is recommended for an individual to begin their meal with *Peya* (Rice gruel), followed by *Vilepi* (softened rice), *Akrutayusha*, *Krutaayusha*, *Akruta Mamsa Rasa*, and finally *Kruta Mamsa Rasa*. These food items should be consumed in the specified order throughout 3, 2, and 1 mealtimes (*Annakala*) respectively.²⁹ In the process of *Pravara Shuddhi*, *Annakala* involves a progression through different diets. The first three diets are consumed with *Peya*, followed by three diets of *Vilepi*. Simultaneously, the other *Kalpana* is followed until the last *Kritamamsa Rasa* is taken. Following this, the

regular diet is resumed. In the case of *Madhyama Shuddhi*, 2 *Annakala* is followed, and for *Avara Shuddhi*, 1 *Annakala* is followed. This dietary regimen is followed for purification and balance.²⁶

Table No. 02 Samsarjana Krama consumption as per shudhi

Days	<i>Annakala</i>		<i>Pravara shuddhi</i>	<i>Madhyama Shuddhi</i>	<i>Avara shuddhi</i>
Day- 1		Morning	-	-	-
	1	Evening	<i>Peya</i>	<i>Peya</i>	<i>Peya</i>
Day- 2	2	Morning	<i>Peya</i>	<i>Peya</i>	<i>Vilepi</i>
	3	Evening	<i>Peya</i>	<i>Vilepi</i>	<i>Alpa Krita yusha</i>
Day- 3	4	Morning	<i>Vilepi</i>	<i>Vilepi</i>	<i>Alpa Krita mamsa arasa</i>
	5	Evening	<i>Vilepi</i>	<i>Akrita yusha</i>	
Day- 4	6	Morning	<i>Vilepi</i>	<i>Krita yusha</i>	
	7	Evening	<i>Akrita yusha</i>	<i>Akrita mamsa Arasa</i>	
Day- 5	8	Morning	<i>Krita yusha</i>	<i>Krita mamsa Arasa</i>	
	9	Evening	<i>Krita yusha</i>		
Day- 6	10	Morning	<i>Akrita mamsa Arasa</i>		
	11	Evening	<i>Krita mamsa Arasa</i>		
Day- 7	12	Morning	<i>Krita mamsa Arasa</i>		
		Evening	Normal food		

The rationale behind implementing a graduated diet is rooted in the concept of *Guna* (Qualities) attributed to different food items. According to this concept, *Peya* is considered to be *Laghu* (easily digestible) when compared to another preparation called *Kalpana*. In contrast, *Vilepi* gradually transitions to a heavier consistency compared to *Peya*. Additionally, as *Kritayusha* is mixed with *Ghrita/Taila*, *Lavana*, and *Trikatu*, the *Guna* (qualities) of the food undergoes a transformation, which also facilitates the process of digestion (*Pachana Kriya*). The *Samsarjana Krama* is a method used for two primary purposes. Firstly, it aims to provide the stomach and intestine with the necessary time to replenish *Jatharagni*, which is the digestive fire, during the *Samshodhana* procedures. This helps in preparing the digestive system for the next stage of the process. Additionally, it is aimed at gradually increasing the *amla* (acidic) and *Kshareeya* (alkaline) secretions in the stomach and intestine. This gradual approach is important because a sudden increase in *amleeya* (acidic) or *kshareeya* (alkaline) secretions can lead to damage to the mucosa and cause harm to the organ muscles, potentially resulting in conditions such as gastritis and ulcers.

To facilitate this process, the first phase involves providing easily digestible *Laghu Aahara* (Light diet), followed by the transition to *Guru Aahara* (Heavy diet) in the subsequent phase. This gradual transition aims to support the optimal functioning of the digestive system and overall well-being.³⁰ *Samsarjana Krama* is a dietary practice that involves a sequential transition of food choices. It begins with a diet consisting solely of carbohydrates, including *Peya* and *Vilepi*, gradually introducing proteins with *Akrita Mudgayoosha*, then adding fats with *Krita Mudgayoosha*, and finally returning to a normal diet. This method aims to enhance the body's absorptive capacity and maintain the vitality of *Dhatu*, the body tissues. By following this process, the bioavailability of nutrients is improved, which in turn contributes to the

overall upliftment of the biological system. Energy-giving are supplied first so Carbohydrates and fats are provided first.

Shuka Dhanya is given in the initial stage in the form of *Peya* (liquid) as liquid needs a smaller amount HCl compared to dense food. *Peya* is a liquid in form with little rice granules and easily digested with less HCl secretion, while *Vilepi* is semisolid and needs more digestive enzymes than *peya*. Both *Peya* and *Vilepi* are *Shuka Dhanya* (cereals). *Yusha* is a gram (*Shimbi Dhanya*), is advised to be consumed in a simple form deprived of spices, and fat is added to in the preparation method to kindle bile secretions. At this point, enzymes for digesting carbohydrates and fats are secreted, and the mucous is somewhat repaired. After *Shuka Dhanya*, *Shimbi Dhanya* is provided. This is due to the deficiency of lysine, an essential amino acid, in cereal protein, *Shuka Dhanya*. The deficiency is addressed by the abundant presence of lysine in pulse proteins, *Shimbi Dhanya*. Conversely, the significant amount of methionine, another essential amino acid, in cereals compensates for the lack of methionine in pulses. This reciprocal relationship between cereals and pulses ensures a more balanced and complete essential amino acid profile in the overall diet.³¹

Nayak A. et al, say Following the *Panchakarma* procedure, which is a detoxification and rejuvenation program in *Ayurveda*, it is observed that the functioning of the digestive system and enzymes is temporarily reduced. At this stage, it is recommended to follow a diet that provides ample energy for the body while accommodating its low digestive capacity. Rice, being a staple and nutritious food, is rich in easily digestible carbohydrates, making it an ideal choice for such a post-*Panchakarma* diet. Starch, which is a complex carbohydrate, is the predominant component in rice. When rice is cooked, the digestibility of starch increases. Furthermore, the proteins found in both husked and polished rice have a lower

biological value, but they are more easily digested. Despite this, the protein in rice is considered to have a high nutritive value, surpassing that of wheat and other cereal products.³²

Sushma M et. al, the nutrients found in *Peyadi Samsarjana Karma*, such as *Peya* (thin rice gruel) and *Vilepi*(cooked rice) are rich in a variety of essential components. These include rock salt (sodium chloride), pepper (sodium chloride potassium), beta-carotene, carbohydrates, and an array of micronutrients like Vitamin C, A, E, iron, and Zinc. Yusha, on the other hand, is a significant source of protein and contains rock salt (sodium chloride), pepper (sodium chloride potassium), beta-carotene, as well as a wide range of vitamins including A, B12, B6, C, D, E, and important minerals such as folate, calcium, iron, magnesium, manganese, thiamine, niacin, pyridoxine, phosphorus, riboflavin, and zinc. Similarly, *Mamsarasa* (meat soup) is abundant in rock salt (sodium chloride), pepper (potassium), beta-carotene, ginger (potassium, magnesium, phosphorous, zinc, sodium), and an array of vitamins including A, C, iron, and calcium.³³

During the process known as *Samsarjana krama*, it was observed that there was a gradual increase in postprandial (after-meal) and random blood sugar levels, both of which remained within the normal range during the *Anna Kala* period. Additionally, fasting blood sugar levels were maintained within normal limits even when the body was in a semi-starved state, possibly due to the body conserving energy. Furthermore, it was noted that there was a gradual increase in *Abhyavaharna Shakti* (appetite), accompanied by aversion to the meals provided during the *Samsarjana Krama*. These observations suggest important insights into the body's response during this process.³⁴

METHODS: Methods of preparations of different *Peyadi Samsarjana Krama*^{35, 36}, are as follows

PREPARATION OF PEYA: *Peya* is a nutritious gruel made from a mixture of rice and its liquid portion with few boiled rice grains. This *Peya* is prepared by adding 14 parts of water to 1 part of rice, and the mixture is boiled until all the rice particles convert soft. This gentle and easily digestible dish is known for its ability to promote digestive health, cleanse the bladder, reduce hunger, thirst, tiredness, and weakness, and promote the natural downward movement of the body's energy. Additionally, *Peya* encourages sweating and enhances the body's digestive capacity.

PREPARATION OF VILEPI: *Vilepi* is a type of rice preparation with a unique consistency compared to *Peya*. It is more solid and requires a ratio of four parts of water for one part of rice. The rice is cooked until it becomes soft, resulting in a creamy and thick texture. This dish is known for its therapeutic properties such as *Tarpana* (nourishing), *Brumhana* (nourishing and promoting growth), *Hridya* (beneficial for the heart), *Madhura* (sweet), and *Pitta Shamaka* (pacifying pitta dosha). It is believed to be good for the heart and is effective in pacifying *pitta* due to its sweet after taste. *Vilepi* provides a sense of satiety and is known for promoting body corpulence, making it suitable for those who need to gain weight.

Acharya Sushruta, an ancient Indian physician, has provided a detailed explanation of two types of "*yusha*," namely "*krita*" and "*akritayusa*." The *krita yusha* is prepared using a combination of *sneha* (fats or lipids), *lavana* (salt), and spices, while the *akritayusa* is devoid of these components and is essentially plain boiled dhal. *Yusa*, or the combination of these ingredients, exhibits various properties such as *agnidipaka* (enhancing digestive fire), *rocaka* (appetizing), *vrsya* (aphrodisiac),

swarya (promoter of voice quality), *varnya* (enhancing complexion), *balakara* (promoting strength), and *agnivardhaka* (increasing digestive power). These properties collectively contribute to increased sweating and induce a sense of achieving the desired purification.

PREPARATION OF AKRITA YUSHA: To prepare this dish, it involves cooking 1 *pala* (which is equivalent to 48 grams) of *Kalka Dravya* (*Mudga DaI*) with 1 *Prastha* (equal to 768 millilitres) of water. Importantly, no *Sneha Dravya* (Oil/Ghee) or any other particles are added during the cooking process.

PREPARATION OF KRITA YUSHA: The preparation involves cooking 48 grams of *Moong Daal* (*Kalka Dravya*) and 6 grams of *Shunthi & Pippali* (*ardha Karsha*) in 768ml of water (1 *Prastha*) along with the addition of *Sneha dravya* (Oil/Ghee). This preparation is described as *Balya* (energetic), *Laghu* (light for digestion), *Rochaka* (increases taste), *Kanthy* (good for the throat), and *Kaphahara* (reduces *Kapha*).³⁸

PREPARATION OF AKRITA MAMSA RASA: *Akrita Mamsa Rasa* is a traditional meat soup prepared by boiling chopped meat in the appropriate amount of water without adding any other ingredients. It is a simple yet flavorful dish that highlights the natural taste of the meat. For vegetarian individuals, a similar soup called *Soya Akrita Yusha* is prepared using the same method as *Akrita Mudga Yusha*, and it is served as an alternative option. This vegetarian version provides a similar consistency and can be enjoyed by those who follow a vegetarian diet.

PREPARATION OF KRITA MAMSA RASA: Meat soup is made by boiling chopped meat in the appropriate amount of water and then adding a mixture of *Sneha*, *Lavana*, *Ardraka*, and various other spices. This special soup, known as *Krita Mamsa Rasa*, is not only comforting and satisfying but also has therapeutic benefits. It is

particularly helpful for individuals suffering from emaciation, weakness following a chronic illness, naturally lean constitution, and low semen count. Furthermore, this soup is known to enhance strength, improve complexion, and act as a rejuvenating elixir for a variety of ailments.³⁹

Preenana (Truptikara) & Hrudya is a traditional Ayurvedic formula recommended for individuals experiencing conditions such as emaciation, weakness following chronic illness, innate leanness, and low semen count. This formulation is known to enhance strength, and improve complexion, and is believed to have a rejuvenating effect for a wide range of ailments.⁴⁰

For individuals following a vegetarian diet, *Soya Krita yusha* is prepared using a method similar to the preparation of *mudga yusha* and then served. *Soya* is known for possessing similar qualities as *mamsa*.

The *Samsarjana Krama* is a process in *Ayurveda* that involves a gradual transition of dietary components to support the body's absorptive power and maintain the vitality of *Dhatu* (bodily tissues). It begins with a stage where only carbohydrate-rich foods such as *Peya* and *Vilepi* are consumed. This is followed by the gradual addition of proteins in the form of *Akrita Mudgayusha & rasa*, and then the incorporation of fats in the form of *Krita Mudga yoosha & rasa*. Finally, the diet is restored to a normal balanced state. This systematic dietary transition is believed to enhance bio-availability and uplift the biological system, thereby supporting overall health and well-being according to *Ayurvedic* principles.

Initially, the body ingests starch and carbohydrates through *Peya*, providing a quick source of energy. Next, fibres from *Vilepi* aid in digestion and contribute to a healthy digestive system. The body then absorbs proteins from *Yusha*, which are

essential for the growth and repair of tissues. Finally, *Maamsa Rasa* supplies the body with healthy fats, necessary for various bodily functions and overall health. This sequence represents a transition from simpler to more complex food components before returning to the regular eating routine.⁴¹

Table. 03. Showing different nutritive values present in *Samsarjana Krama*

Sl. No	<i>Samsarjana item</i>	Major nutrients present
1	<i>Peya</i> (Rice Gruel)	Carbohydrates
2	<i>Vilepi</i> (Cooked Rice)	Carbohydrates
3	<i>Akritayusha</i> (Green Gram Soup without oil & Spices)	Carbohydrates, proteins
4	<i>Kritayusha</i> (Green Gram Soup with oil and Spices)	Carbohydrates, proteins & fats
5	<i>Akrit Mamsa Rasa</i> (Meat Soup / Soya Soup without oil & Spices)	Carbohydrates , proteins
6	<i>Krita Mamsa Rasa</i> (Meat Soup / Soya Soup with oil and Spices)	Carbohydrates, proteins & fats

After the *Samshodhana Karma* physicians should protect patients as a freshly hatched egg, as a brimful oil -pot, and as the cattle are protected by the cowherd.⁴²

According to Acharya Shivadasa Sen's commentary, the *Samsarjana Krama* is recommended to be performed after the *Vamana* and *Kaya Virechana* therapies. This is since these two therapies irritate the *ashrayas*, which can lead to *Agni Mandhya*, a condition related to weakened digestive fire.⁴³

Why starts with *Peya*?

In the Ayurvedic text, *Acharya Charaka* discusses the concept of *Vamite Vardhate Vahani*, which means the increase of *Agni* (digestive fire) after *Vamana*

Karma, a therapeutic vomiting procedure. He also notes that *Agni* gets subdued due to *Samshodana*, a purification process. In clinical practice, it is observed that the patient's *Abhyavaharana Shakti* (metabolic power) remains intact or may even increase after the purification therapy, while the *Jarana Shakti* (digestive power) is definitely decreased.

As a result, the patient may experience hunger but struggles to digest any type of food. Consequently, the physician must provide nourishment that satisfies hunger and helps increase the *Agni*. In such cases, *Peya*, a liquid gruel, is considered the preferable choice due to its ability to alleviate hunger and thirst while aiding in the increase of *Agni*.⁴⁴

Why follow the particular *Krama*?

After *Vamana* and *Virechana* procedures, Acharya has mentioned that *Daurbalya* and *Glani* are symptoms that might occur if the *Karma* is done properly. Therefore, energy supplements should be given immediately after *Vamana* or *Virechana*, considering the state of *Agni*. Providing carbohydrate supplements like *Peya* will offer the patient instant energy and help in increasing subdued *Agni*. Once the power and stability of *Agni* increase, a heavier and more digestible diet can be given. Following the administration of *Peya*, *Yusha* (protein supplement) and *Mamsa Rasa* (fat supplement) should be provided in sequence.

In the ancient texts of *Ayurveda*, it is not explicitly mentioned what should be used as a substitute for *mamsarasa* in the case of vegetarian individuals. This decision should be made based on the physician's thoughtful consideration. The diet prescribed for vegetarians should aim to enhance *agni bala* (digestive strength), promote *brumhana* (nourishment), and increase *prana vardhana* (vital energy). As a suitable

choice, one may consider providing *sarva dhanya kurta Yusha* with *Go-ghritam*, or alternatively, offering *godhuma Yusha* with *Go-ghrita* to achieve these desired effects.⁴⁵

Rachana & Kriya of Amashaya and Pakwashaya:

Koshta is a place where *Amashaya*, *Agnyasahaya*, *Pakwashaya*, *Mootra*, *Rudir*, *Hrudaya*, *Unduka* and *Pupphusa* resides. As per the opinion of *Acharya Charaka* synonyms of *koshta* are - *Mahasrotas* (the great channel), *Mahanimna* (the great cavity), *Shareera Madhya* (the mid part of the body), *Abhyantararogamarga* (internal pathway of disease). *Amapakwashaya* (the stomach including the small intestine and large Intestine).⁴⁶

Jatharagni, also known as *pachakapitta*, *Kosthagni*, or *Kayagni*, is a vital concept in *Ayurveda*. It refers to the digestive fire which is accountable for breakdown and assimilation of food in the body. According to the teachings of *Arunadatta*, *Kayagni* is believed to manifest between the *Amashaya* (Stomach) and *Pakvashaya* (Largeintestine), specifically in the area known as *Grahani*, which corresponds to the location of the Duodenum.

In *Ayurveda*, *Amashaya* is described as the region located between the *nabhi* (umbilicus) and *stana* (breast), and it is where undigested food, known as *ama anna*, is believed to accumulate. Additionally, the ancient *Ayurvedic* scholar, *Acharya Chakrapani*, distinguished the *urdhwa* (upper part) and *adho* (lower part) of *amashaya*, associating them with the dominance of *kapha* and *pitta doshas* respectively. This understanding provides insight into the partitioning of the digestive functions in the body.

It's important to note that *Amashaya* serves as the root (*moola*) of the *annavaha srotas*, the channel responsible for transporting and digesting food within the alimentary tract. Understanding the roles and interconnectedness of these components is fundamental in Ayurvedic principles of maintaining holistic health and wellness. *Pakwashaya* is the *sthana* of *pakwa anna* (digested food) & it is the *vishesha sthana* of *vata*. The *ama anna* (undigested food) after getting *pakwa* (digested) moves to *pakwashaya*. *Pakwashaya* is the *moola* of *purishavaha srotas*.

The ingested food after the *paka* by *Koshthagani* gets converted into *sara bhaga* (nutrient/essence part) and *kitta bhaga* (waste part) in *Annavaha Srotas*. The *Sara bhaga* is absorbed by the *shareera* & *kitta bhaga* (waste) being transformed into feces (*purishas*) in the *pureeshavaha srotas* by the *purishadhara kala* gets evacuated through the anorectal rout (*Guda marga*).⁴⁷

As per contemporary science, the digestive system consists of two groups of organs- the Gastro intestinal tract and Accessory digestive organs. The gastro intestinal tract (GIT) or the alimentary canal extend from mouth to anus and includes the following organs- Mouth, Pharynx (most part), oesophagus, stomach, small intestine and large intestine. The accessory digestive organs include teeth, tongue, salivary glands, liver gall bladder and pancreas.

The digestive system performs six basic functions – ingestion, secretion, mixing & propulsion, digestion, absorption and defecation. Ingestion is taking the food into the mouth, secretion is release of acid, buffer & enzymes into the lumen of GIT, mixing & propulsion is the churning and movement of food, digestion is mechanical and chemical breakdown of food, absorption is passage of digested product from the GIT into the blood and lymph & defecation is the elimination of undigested food from the GIT.⁴⁸

AGNI

अङ्गति व्याप्नोति इति अग्नि

The one which is present in each and every cell of the human body is known as *Agni*.

In *Ayurveda* the concept of *Agni* is directly linked up with the biological *Agni* in form of *Pitta* inside the human body. *Agni* is responsible for conversion of food into energy or vigour and which is responsible for all the vital activities of our body. If the *agni* is disturbed or vitiated then it should be understood that the whole metabolism disturbed, resulting in idisease and ill health. Hence *agni* is called as base of life. *Agni* helps for maintenance of *Ayu* (life), *Varna* (Color), *Bala* (Strength), *Swasthya* (Health), *Utsaha* (Enthusiasm), *Upachaya* (metabolism), *Prabha* (complexion), *Oja* (immunity), *Teja* (complexion), *Agni* (Dhatvagni) and *Prana*.⁴⁹

In *Ayurveda*, "*Agni*" refers to the entire process of energy liberation, encompassing digestion within the gastrointestinal tract (GIT) and metabolism within tissues. This term symbolizes the entire biological conversion and utilization of energy, including digestion, metabolism, and assimilation. The ability of living beings to utilize, conserve, and transform energy distinguishes them from non-living entities. Therefore, maintaining the living state hinges on the normalcy of this energy transformation process. When this process is interrupted, it results in death, and when it malfunctions, it leads to disease. *Ayurvedic* physiology, including the biochemistry of digestion and metabolism, is conceptualized through *jatharagni*, *dhatwagni*, and *bhutagni*.⁵⁰

TYPES OF AGNI:

Charaka described 13 types of *agnis*: one *Jatharagni*, five *Bhutagnis*, and seven *Dhatvagnis*. According to Acharya Sushruta, there are five types of *agnis*: *Pachakagni*, *Ranjakagni*, *Alochakagni*, *Sadakagni*, and *Bhrajakagni*. However, there is an indirect reference to five *Bhutagnis* in the brief description of the transformation of food substances.⁵¹

***Jatharagni*:** *Jatharagni* is considered the most important *agni* because every nutrient ingested first encounters *Jatharagni* in the stomach, where it is subjected to its action. *Jatharagni* digests food materials composed of the five basic elements and transforms them for use by the respective *Dhatus* (tissues).

Jatharagni is also responsible for separating food materials into the essence portion (*Prasad*) and waste products (*Kitta*) in the body. It is directly related to *Dhatvagni*, or bio-energy in the cells, and their metabolic processes, which ultimately lead to tissue metabolism or the *Dhatu-Paka* process. The proper functioning of all *Dhatvagnis* depends on the normal, healthy state of *Jatharagni*. If *Jatharagni* is hyperactive (*Tikshna*) or hypoactive (*Manda*), it will cause an excessive or reduced action of the *Dhatvagni*, leading to various disorders. *Jatharagni* is the primary *agni* that controls the function of all other 12 *agnis*. The status of all the *agnis* is entirely dependent on *Jatharagni*.

SITE AND FUNCTION OF JATHARAGNI:

स्वस्थानंकायाग्नेःपक्वआमाशयोःमध्यम्। (अरुणदत्त)

Svasthana – Arunadatta clarifies the meaning of *Svasthana* of *Kayagni*. He tells that the site of manifestation of *Kayagni* is at a place between *Amashaya*

(Stomach) and *Pakvashaya* (Large Intestine) which is considered as *Griahani* (Duodenum). *Jatharagni* is also classified into four categories according to its performance of digestion in the human being,⁵² namely *Vishamagni*, *Tikshanagni*, *Mandagni* and *Samagni*.⁵³

According to *Hareeta Samhita*, *Samagni* depends on whether the *Doshas* (*Vata*, *Pitta*, *Kapha*) are in normal stage. When the *Pitta* is higher than normal, the condition is known as *Tikshnagni*. When *Vata* and *Kapha* are higher than normal, the condition is known as *Mandgni*.

Avasthas of *Jatharagni* is of four kinds namely *Vishamagni*, *Teekshnagni*, *Mandagni* and *Samagni* based on the involvement of *doshas* *Vata*, *Pitta*, *Kapha* and equilibrium of *tridosha* respectively as explained below.

1. VISHAMAGNI: The concept of *Agni*, or digestive fire, pertains to its variability in functioning between different meals. This variability in *Agni*, the digestive fire, can give rise to an unstable or ever-changing type of digestive function. It may present with symptoms such as increased flatulence, abdominal pain, and difficulty in the smooth elimination of feces and gas. This type of *Agni* is typically predominant in individuals with a *Vata* constitution but can also develop in others due to excessive consumption of foods and engagement in activities that aggravate *Vata*. Consequently, this can lead to *Vata*-related illnesses. This type of *Agni* isn't consistent and shows fluctuations between rapid and sluggish digestion of food.⁵⁴

2. TEEKSHNAGNI: *Tikshnagni* means very quick/very sharp/very fast. It is a type of *agni*, which digests even large quantities of food earlier to the scheduled time regardless of the type of food. Produces burning sensation inside the abdomen, sour belching, thirst, feeling of hot fumes coming out and other troubles. It is normally

found in persons of *pitta prakriti*, develops in others by the use of *pittakara ahara vihara* (food and activities causing increase of *pitta*) and gives rise to diseases of *pitta* origin. *Acharya Sushruta* states that when the power of digestion is increased from normal to above normal, food digests very quickly and produces hunger or the desire for food. When food is digested, the throat, the mouth cavity and the lips become dry with a burning sensation. This condition is known as *Bhasmak Roga* according to Ayurveda.⁵⁴

3. MANDAGNI: “*Manda*” means slow. The term “*Mandagni*” refers to a condition characterized by slow digestive power or capacity. Individuals with *Mandagni* experience difficulties in digesting even small amounts of food, leading to reduced food intake. According to *Dhanvantri*, *Mandagni* is defined as the inability to digest even a small quantity of food within the expected timeframe. This digestive impairment can manifest as heaviness in the abdomen and head, prolonged stagnation of food, cough, vomiting, and breathing difficulties, among other bodily discomforts. *Mandagni* is commonly observed in individuals with a *kapha prakriti* (constitution), and it can also develop in others due to the consumption of *kapha*-increasing foods and engagement in *kapha*-exacerbating activities. This can then give rise to diseases of *kapha* origin.

4. SAMAGNI: The process of “*Samagni*” encompasses the efficient digestion and assimilation of food within the scheduled time, ensuring that it does not cause any disruption to the body's functions. This ideal state of digestion is essential for promoting overall health and maintaining a balance of *tridosha* and *doshas*, as well as all *shareera karmas*. Furthermore, it contributes to the enhancement of the *Dhatus*, which are the supportive tissues of the body. Individuals with “*Samagni*” are

characterized by their consistent state of good health, as it indicates a robust digestive system and efficient assimilation of nutrients from food.⁵⁵

Except *samagni*, which is *prakrita* (normal), the remaining three are *vaikrita* (abnormal) and lead to the production of various diseases. The number of diseases produced by *mandagni* (weak digestive activity) is more than other two. Hence a categorical statement that “all diseases are due to *Mandagni*.”⁵⁵

By observing the *avasthas* of all *agnis* it was decided that the *vishamangi* subjects will not be included in this study, because of varying pattern of digestive fire with respect to time.

Assessment of *Rasa Kshaya Lakshana*: As per *Ayurveda* body is made up of seven *dhatus* (Body tissues). First *dhatu* is called as *rasa dhatu*, *kshaya* (diminution) of this leads to restless, does not withstand loud sounds, palpitation, cardiac pain, exhaustion even with the slightest exertion,⁵⁶ *kampa*, *shoonyata*, *trishna*,⁵⁷ *shrama*.⁵⁸ Same signs and symptoms are seen in hypoglycaemia viz. and the signs of *rasa kshaya* are observed in this study.

Assessment of Hypoglycaemia: Hypoglycemia occurs when the blood glucose level falls below its normal range. When the blood glucose level is between 50-70 mg/100 ml, the central nervous system becomes highly excitable, leading to symptoms such as hallucinations, extreme nervousness, trembling, and sweating. When the blood glucose level drops to 20-50 mg/100 ml, clonic seizures and loss of consciousness are likely to occur. As the glucose level falls even lower, the seizures stop, leaving only a state of coma.⁵⁹

So by these signs and symptoms in this study, to know the blood glucose levels in subjects of post-*Vamana/Virechana* especially during *Samsarjana Krama*.

Evaluation of *jeernahara Lakshanas*: (Digestive capacity):

उद्गारशुद्धिरुत्साहो यथोचिता वेगोत्सर्गः। लघुत्वं क्षुत्पिपासा च जीर्णहारविज्ञानम्॥

After the completion of the digestion process, the signs of proper digestion, also known as *Jeerṇa Ahara Lakshana*, manifest as a sense of renewed enthusiasm, lightness in the body, clear and effortless eructation (the act of belching), a healthy appetite, quenched thirst, and a timely and satisfactory bowel movement. These markers signify the harmony and efficiency of the digestive system. ["*Charaka Samhita*," *Vimana Sthana*, Chapter 2, Verse 10.]

This shloka outlines the signs that indicate proper digestion and assimilation of food, which are crucial for maintaining health according to Ayurveda. The signs mentioned in the shloka are as follows:

1. **उद्गारशुद्धि (Udgara Shuddhi)** - Purity of belching: This signifies that the belching should be clear, indicating the absence of any taste or smell of the previously consumed food. Pure belching suggests that the food has been digested properly and there is no indigestion or fermentation occurring in the stomach.
2. **उत्साह (Utsaha)** - Enthusiasm or energy: After digestion, one should feel energetic and enthusiastic. This reflects that the digestive process has effectively converted food into usable energy, thus supporting the body's functions and vitality.
3. **यथोचिता वेगोत्सर्गः (Yathochita Vegotsarga)** - Proper elimination of natural urges: Proper digestion is marked by the timely and appropriate elimination of bodily wastes and urges, such as defecation and urination. This regularity indicates that the body's metabolic processes are functioning optimally.

4. **लघुत्व (Laghutva)** - Lightness of the body: Feeling light and comfortable in the body is a sign of proper digestion. This lightness suggests that the food has been fully processed and absorbed, without causing any heaviness or discomfort.
5. **क्षुत् (Kshut)** - Hunger: A healthy appetite or the feeling of hunger at appropriate times indicates that the previous meal has been properly digested, and the body is ready to take in more nutrients.
6. **पिपासा (Pipasa)** - Thirst: Normal thirst, aligned with the body's needs, is another sign of proper digestion. It suggests that the body's fluid balance is being maintained effectively.

These signs are collectively known as *Jeerna Ahara Lakshana*, which help in assessing whether the consumed food has been digested properly. When these signs are present, it indicates that the digestive fire (*Agni*) is functioning well, leading to optimal health and well-being. Conversely, the absence of these signs can point to digestive issues, which might require dietary adjustments or therapeutic interventions to restore balance.

Recent reviews on *Pathya Kalpana*:

Atreya P et al 2013, During the *Samsarjana Krama* it was noted that there was gradual increase in postprandial and random blood sugar within the normal limits during the *Anna Kala* period. Fasting blood sugar levels were maintained in normal limits even in the semi-starved state which may be due to body going into conservation mode limiting the energy expenditure. It was noted that there was gradual increase in *Abhyavaharna Shakti* (appetite) with aversion to meals provided during the *Samsarjana Krama*.⁶⁰

Akshay Kumar Agrawal et, al, Pitta and Agni share similarities but are distinct based on their unique compositions. In Ayurveda, Agni refers to the digestive fire or energy responsible for metabolism. According to Ayurvedic philosophy, different types of dietary materials are believed to be digested by specific *Agni*, known as *Bhutagni*. This digestive process is further facilitated by *Antaragni*, also known as *Jatharagni*, which is responsible for the initial digestion and metabolism of the consumed food.

Subsequently, *Dhatvagni* comes into play to further metabolize the digested food, connecting the body with essential nutritional strength, promoting healthy complexion, and contributing to overall well-being. Furthermore, *Dhatvagni* is believed to provide energy to the seven dhatus, which are the seven basic tissues of the body according to Ayurvedic medicine.⁶¹

DRUG REVIEW

***SHALI* (Rice):**

It is *Balya*, *Varnya*, *Chakshushya* , *Svarya*, *Mutrala*, and *Shukrala*, Increases *Agni*, and Is *Pushtikara*. It is *Tridosahara*, *Tushana* and *Jwarahara*. Useful in *Visha*, *Vrana*, *Shvasa*, *Kasa* and *Daha*. Rice is the predominant dietary energy source contributes to 780 and 689kcal/capita/day of the food supply in Asia and India, respectively. Rice primarily consists of carbohydrates, proteins and small quantities of fat, ash, fiber and moisture. Vitamins and minerals are largely confined to the bran and germ.⁶² Long-grain raw white rice, is a good source of carbohydrates, calcium, iron, thiamine, pantothenic acid, folate and vitamin E. Rice has the ability to provide fast and instant energy.⁶³

It contains 72.2%-74.9% Starch, 1.45-2.65% Glucose, 0.3 – 0.47% Sucrose, 1.56 – 2.0 % Dextrin. It also has moisture, Proteins, Carbohydrates and Some Minerals Like Calcium, Phosphorus, Sodium, Potassium, Sulphur, Magnesium, and Chlorine. Rice has a well-balanced amino acid profile due to the presence of lysine.⁶⁴ The lysine content of rice protein is between 3.5 and 4.0%, making it the highest among cereal proteins.

MUDGA (Green Gram):

Shimbi dhanya/Shami dhanya (legumes and pulses) *varga* supply the required proteins. *Mudga* (*Phaseolus mungo/Vigna radiata*) commonly known as Green gram is the best (*Sreshta/Hitakara*) among *Shimbi dhanya*.⁶⁵

Mudga is *Madhura* (sweet) and *Kashaya* (astringent) in taste, *Laghu* (light for digestion), *Ruksha* (dry), *Sheeta veerya* (Cold in potency), *Katu vipaka* (post-digestive transformation into pungency) and it exhibits *Kaphapittahara Vatakaratva* (pacifies *kapha* and *pitta* whereas aggravates *vata*).⁶⁶ It is best among the pulses utilized in the form of soups.⁶⁷ and it is also one among the *nitya sevaneeya* or *abhyaset (upayogi) dravya*.⁶⁸ Green-Gram Mature Seeds, Raw per 100 g contains 347kcl energy, 23.86g Proteins, 62.62 g Carbohydrates.⁶⁹

After *samsarjana karma*, the *saamana bhojana* should start with *Mudga yusha*.⁷⁰ There are two forms of *Mudga* i.e *tusha* (husk) and *nishtusha* (dehusk). The *tusha* (husk) form of *Mudga* is *guru* in nature, whereas *nishtusha* (dehusk) is *laghu* in nature. Dehusked pulses when slightly fried become *laghu* (light) for digestion.⁷¹ It is useful in *dourbalya* (weakness), *daha* (heat disorders), *tvak roga* (skin disorders).

MAMSA VARGA:

Mamsa is also called as *Pishita*, *Kravya*, *Aamisha*, *Palala* and *Pala*⁷² All *Mamsa* are *Madhura rasa* and *Madhura vipakayukta*, *Brumhana*, gives *bala* and *pushthi*, *santarpanakaraka*, *guru*, *hrudya* and *Vatanashaka* in nature and *guru*.⁷² As per *Sushruta* there are 6 types and as per *Charaka* there are 8 and *Bhavaprakasha* 2 types of *mamsa* are explained. *Vaidyak Paribhasa Pradeep* for preparing *Mamsa rasa*, the quantity of *Mamsa* is taken two times that of medicine and water is taken two times that of *Mamsa*. This is boiled till one fourth is remained.

Types of *Mamsa rasa*:

Mamsa rasa is of two types:

- *Krita Mamsa rasa*
- *Akrita Mamsa rasa*

In the teachings of *Acharya Charaka*, it is believed that *Mamsa rasa*, or meat soup, not only brings satisfaction to all living beings, but also provides optimum nourishment for the heart and is akin to nectar for individuals who are experiencing dryness, recovering from illness, or undergoing physical weakness. This potent remedy is particularly beneficial for those seeking to regain strength and vitality, as it is known to significantly alleviate disease, promote a healthy voice, instill vigor, and sustain overall well-being. According to these teachings, individuals who maintain a regular routine of physical exercise, sexual activity, and moderate alcohol consumption, while incorporating meat soup into their daily diet, are less likely to suffer from ailments or debility.⁷³

Meat:

Meat is a crucial component of the human diet, offering an array of essential nutrients. It serves as a primary source of high-quality dietary protein, providing the body with the necessary building blocks for various physiological functions. Additionally, meat contains significant amounts of fats, both essential and non-essential, which play a role in energy provision and cell membrane structure. It also serves as a rich source of various vitamins and minerals such as heme-iron (a more readily absorbable form of iron), protein-rich selenium, and vitamins A, B12, and folic acid, which are essential for overall health. In a 122g serving, meat provides approximately 122 calories, 2.8g of fat, and 23g of protein, making it a substantial and nutrient-dense food choice.⁷⁵

SOYABEAN:

It is normally comprised of nearly 35 to 40% protein, 20% lipids, 9% dietary fiber, and around 8.5% of moisture. These are highly nutritious, functional, and economical food ingredients. The important soy components that exhibit biological activity are proteins and peptides, saponins, isoflavones, and protease inhibitors. Soybean and its products are considered as important sources of plant protein as they are constituted of a high amount of essential amino acids and they have various benefits on human health.⁷⁶

SAINDHAVA LAVANA:

Dr. Shilpa Nimbal et.al According to the teachings of *Charaka*, *Saindhava Lavana* is known to be the most beneficial among all the salts for internal use. It is considered to be the most useful for both medicinal purposes and as a dietary salt among the *Pancha Lavan*as. *Saindhava Lavana* is described as having the qualities of

being *laghu* (light), *snigdha* (unctuous), *rochana* (appetizing), *deepana* (helps digestion), *pachana* (digestive), *chakshushya* (good for the eyes), *tridoshaghna* (balances the three doshas), *hrutnetrarogaghna* (beneficial for heart and eye diseases), *vranasandhi vibandha* (healing for ulcers and joint stiffness), and *aruchi nashaka* (relieves tastelessness or anorexia).

There are two varieties of *Saindhava Lavana*, which are white and red. According to Acharya Charaka, it is considered *tridosahara* (balances all three doshas), *deepana* (stimulates the digestive fire), *rochana* (improves taste), *hrudya* (good for the heart), *chakshusya* (beneficial for the eyes), *vrishya* (aphrodisiac), and *avidahi* (does not produce burning sensation). It is known to be effective in curing *Netrarogas* (eye diseases) and *Vranasandhi* (healing ulcers) *Vibandha* (constipation).⁷⁷

FATS IN AYURVEDA:

Fats in *Ayurveda* could be understood by the context of *Sneha*. The four major *Sneha*'s explained are *Ghrita*, *Taila*, *Vasa*, *Majja*. The context of *Sneha* is explored in depth in various *Samhitas*. *Charakacharya* mentions the *yoni* of *Sneha* being *Sthavara* and *Janghama*. Where *Taila*'s obtained from Drugs is under the *Sthavara Yoni*, while *Ksheera*, *Ghrita*, *Dadhi*, *Aamisha*, *Vasa*, *Majja* come under *Janghama Yoni*. (cha. Su. 13/11). Most widely used *snehas* are *ghrita* i.e clarified butter and *taila* i.e oils.

Ghrita is considered to be the *uttama* or *shrestha* among all the other *sneha* as it can be administered from birth to death and has *madhura rasa* and *avidahi guna*, having a soothing and nourishing nature. It has the ability to enhance the digestive fire, just like in a *homa/yagna ghrita* is used for increasing the fire. *Ghrita* helps to

pacify *Vata & Pitta Dosha* nourishes body & mind enhances the complexion and luster of the skin.

In the *samsarjana krama ghrita* is used as a *prakshepaka dravya* in *Akruta yusha & Akruta Mamsa Rasa*. The main purpose of *samsarjana krama* is to slowly enhance the digestive fire which has diminished after the *shodhana* therapies of *panchakarma*. And also provide a high source of energy for rebuilding the body in a stepwise manner. *Ghrita is Sheeta, mrudu, guru and snigdha*.⁷⁸

SHUNTHI:

Ginger is a complex plant containing over 450 different compounds, some of which have been found to enhance the bioavailability of other substances. Its powerful effects on the mucous membrane of the gastrointestinal tract are well-documented, and it is known to regulate intestinal functions in a way that facilitates the absorption of essential nutrients. When administered at a dose of 10–30 mg per kilogram of body weight, ginger has been observed to act as a bioenhancer, improving the body's ability to absorb and utilize other substances.⁷⁹ It is *katu* in *rasa*. *Laghu*, *snigdha*, *Ushna veerya* and *madhura rasatmaka* and it acts as *Deepana*, *pachana*, *Rochana*, *bhedana*, *vibandhahara*, *jiwashodhaka*.⁸⁰

PIPPALI:

Piperine, the main bioactive compound found in long pepper, plays a crucial role in increasing the bioavailability of various drugs as it enhances their absorption across cell membranes. Additionally, piperine has been observed to reduce the secretion of hydrochloric acid (HCl) and boost blood supply within the gastrointestinal tract (GIT). Furthermore, it has been shown to inhibit gastrointestinal transit, delay gastric emptying time, reduce intestinal motility, and facilitate the uptake of amino acids.

These diverse mechanisms underline the potential of piperine to significantly impact the absorption and effectiveness of various pharmaceutical compounds.⁷⁹ It is *Laghu*, *Teeksna*, *Snigdha*, *katu*, *madhura*, *anushnasheeta*, alleviates vitiated *Kapha*, *pitta* and *vata*, *jwarahara*, *shwasa*, *kasa hara etc.*⁸¹

MATERIALS AND METHODS

Clinical Study:

- The medical trial received approval from the KAHER ethical committee for human subjects.
- **Ref ID: KAHER/Ethic/2018-19/D-122**

Study type:

- Study is a Quasi Randomized controlled trial

Site and source of data:

- Patients from OPD and IPD section of KLE Ayurveda Hospital and Medical Research centre, Belagavi.

Sample size:

- 240 healthy/ill subjects undergoing classical *vamana/virechana karma* with *madhyama shudhi*

Study group:

- 2 groups – Control/RSS/Group-120 participants and Study/SSS/Group2 -120 participants

Intervention period: 5 days

Assessment time points: Subjective Criteria all 5 days morning and evening and objective criteria on the day of *vamana/virechana*

Statistical test:

- Descriptive statistic – Mean, standard deviation, frequency and percentage.
- Inferential statistic – independent sample t test, generalized linear model
- Statistical analysis carried out using SPSS version 20 and p-value <0.05 is considered as significant.
- **Inclusion criteria:**
 - Age group of 18 to 50 yrs of both sexes
 - Undergone classical *Vamana/ Virechana (Madyama Shuddhi)*
- **Exclusion criteria:**
 - *Sadyo Vamana/ Sadyo Virechana*
 - Subjects with *Vamana/ Virechana Vyapat* (complications)
 - Subjects with Diabetes
 - Known case of food incompatibilities
- **Withdrawal criteria:**
 - Any concomitant serious illness develops which require hospitalization.
 - The patient himself /herself wants to withdraw from the study.
 - In any arising clinical scenarios where guides/co-guides feel continuation of patient in the study is detrimental.

Rescue medication: To alleviate any emergency, the use of rescue medication will be permitted as per the wisdom/discretion of the guide/co-guide. However, the same will be documented in the CRF.

Assessment Parameters:**Table No.04. Subjective Parameters as per grading assessed two times per day**

Sl. No	Parameters	Morning	Evening
1	Head Ache	✓	✓
2	Craving for food	✓	✓
3	Flatulence	✓	✓
4	Giddiness	✓	✓
5	Vomiting	✓	✓
6	Distaste	✓	✓
7	Lethargy	✓	✓
8	Aversion to food	✓	✓
9	Presence or absence of exhaustion	✓	✓
10	Abdominal burning sensation	✓	✓
11	Abdominal heaviness	✓	✓

Objective parameters: Blood Glucose level (Thrice on first day of *Samsarjana*):

Fasting Blood Glucose, Post Prandial Blood Glucose and Random Blood Glucose tests.

Intervention:➤ **Control Group: Regular Serving Size Group or RSS Group or Group 1:**

Subjects were served the Regular serving size of *Samsarjana Krama* for 5 days with 8 *anna kala* (food servings) which is practiced at K.L.E. Ayurveda Hospital Shahapur Belagavi Karnataka as below.

Table No. 05. Samsarjana regimen with quantity and time of serving

Name of the Anna (Food) served to the subjects	Fixed Matra (Quantity) served through special bowls	Number of servings	Time of serving
<i>Peya</i> ⁵	400ml	2 times	1 st <i>anna</i> (food) served - On the day of <i>Vamana</i> / <i>Virchana</i> * 2 nd <i>anna</i> served – 2 nd day morning
<i>Vilepi</i> ⁶	250gms	2 times	3 rd <i>anna</i> serving - 2 nd day evening 4 th <i>anna</i> serving - 3 rd day morning
<i>Akrita mudga Yusha</i>	200ml	1 time	5 th <i>anna</i> serving - 3 rd day evening
<i>Krita mudga Yusha</i> ⁷	200ml	1 time	6 th <i>anna</i> serving - 4 th day morning
<i>Akrita Soya Yusha</i> **	200ml	1 time	7 th <i>anna</i> serving - 4 th day evening
<i>Krita Soya Yusha</i>	200ml	1 time	8 th <i>anna</i> serving - 5 th day morning
Normal food	-	-	5 th day evening (start intake in increasing order)

*Samsarjana diet was served when subject expresses *jeernahara lakshana* and proper hunger.

** In place of *Mamsa Rasa* we have served *Soya Yush* as it is rich in protein and most of the qualities are same in both.

➤ **Trial group: Standardized Serving Size Group or SSS Group or Group 2:**

Subjects were served the standardized serving size for 5 days

Informed Consent: Informed written consent was obtained from each participant in the prescribed format prior to performance of study related procedures (i.e. physical examination, laboratory screening). The participants were given full information

about the study as well as a description of any foreseeable risks and discomforts. Participants were also informed of their right to opt out of the study at any time without giving any reasons.

Good Clinical Practice (GCP): The study was conducted in accordance with the principles of Good Clinical Practice that has its principles as reported in the Declaration of Helsinki.

Sample size calculation: 240 Stratified sampling with optimum allocation of the different structure of the body Study. This is the sample size reducing 20% attrition and 95% confidence level.

$$n = Z^2 SD^2$$

$$n = \frac{Z^2 \times SD^2}{(20)^2 SD^2}$$
$$n = \frac{(1.96)^2}{0.04} \times 1.2 \qquad N = 120$$

Detailed explanation of Methodology: In this study there two objectives, first one is standardization of Serving Size and second is to evaluation of effect of standardized serving size over regular serving size. So methodology of the study was carried out in 2 steps.

1. Standardization of Serving Size
2. Evaluation of standardized serving size over regular serving size

1. Standardization of Serving Size: To standardize the Serving of samsarjan karma first step is to assessing *the Deha pramana* and *agni* of the participants. These steps were carried out by following method.

1.1. Deha Pramana Assessment tool development:

Validation- *Ayurveda* Clinicians (n=2) diagnosed *Pravara Dehapramana*, *Madhyama Deha Pramana* and *Avara Deha Pramana* on the bases of traditional method incorporating components like Height, weight, body size etc. and second method of assessing the *dehapramana* was through developed *deha pramana* assessment tool. This assessment was carried out in 30 participants, and we compared *Ayurveda* clinical judgment of the clinicians with *deha pramana* assessment tool scores and cutoff scores were calculated as follows

- 30 healthy participants were taken for the deha assessment
 - 10 participants which includes 5 male and 5 female, falling above and below standard heights were recruited
 - 10 participants falling below and above Ideal Body Weight
 - 10 participants with agni derangments like *manda*, *teekshna* and *sama* (minimum of 3 in each group) were enrolled
- 30 healthy participants were subjected to *deha pramana* assesmmnt (by traditional method and by *Deha pramana* assessment tool) by 2 *Ayurveda* experts.
- Scores of both *Ayurveda* experts were added for each of traditional method and by *Deha pramana* assessment tool and compared.
- Traditional method had positive correlation with the score of developed tool.
- *Avara*, *Madhyama* and *Pravara Deha* assessment by traditional method on comparison showed to fall in the ranges of 4- 6, 7-10, 11-12 in *Deha pramana* assessment tool respectively.

- These cut of scores were taken for further assessment in the study
- *Deha pramana* assessment tool has advantages like objective tool, standardized structured assessment over traditional method
- Sum of total scores given to Height, Weight and *Agni* of each subject is considered as total score of that subject. It has been observed that Scores starts from lowest 4 and end up with highest number 12 score. Based on these scores *Deha pramana* of the subject is decided as *Pravara*, *Madhyama* and *Avara deha pramana* shown below.

Table.06. Deha Pramana Assessment tool

<i>Deha Pramana</i>	Score
<i>Avara Dehapramana</i>	4, 5 and 6
<i>Madhyama Deha Pramana</i>	7, 8, 9 and 10
<i>Pravara Deha Pramana</i>	11 and 12

Based on the above, total scores of each and every subject who have involved in the study were calculated and as per their score they were separated. The subjects who fall in Score 4, 5 and 6 were considered as *Avara Deha Pramana purusha*. 7, 8, 9 & 10 were *Madhyama deha Pramana* whereas 11 & 12 scores were considered as *Pravara Deha Pramana*.

Deha pramana or body frame assessment tool scoring method-

Determination of body frame size is one of the most important factors in this study. Total number of participants were divided into three categories based on *Deha Pramana* i. e. *Pravara*, *Madhyama* and *Avara Dehapramana* These categories were formed on the bases of Scoring which is shown below.

For *Deha Pramana* assessment height and weight are considered and given scorings. For this scoring, standard height of the Indian Men and Women were considered, where the standard height of the Indian Women is 152.6cms (5ft) and Standard height of the Indian Men is 164.9cms (5ft 4.9 inches). Scoring is given as below.

Scoring in Males

HEIGHT SCORING: Indian Male Standard Height is 164.9

Score 1 = If height is < 159.9cms

Score 2 = If height is between 159.9cms to 169.9cms

Score 3 = If height is > 169.9cms

Scoring in Females

HEIGHT Scoring: Indian Female Standard Height is 152.6cms

Score 1 = If height is < 147.6cms

Score 2 = If height is between 147.6cms to 157.6cms

Score 3 = If height is > 157.6cms

Weight Scoring in both gender

To calculate the Ideal Body weight formula was used was “**Height in cms minus 100**”

Height in cms - 100 = IBW (Ideal Body Weight)

Score 1 = If weight is < 5Kgs of IBW

Score 2 = If weight is between - 5Kgs to + 5Kgs of IBW (Minus 5kgs to Plus 5Kgs)

Score 3 = If weight is > 5Kgs of IBW

Agni Scoring in both gender

Score 2 = *Mandagni*

Score 4 = *Samagni*

Score 6 = *Teekshagni*

Sum of total scores given to Height, Weight and *Agni* of each subject is considered as total score of that subject. Based on these scores *Deha pramana* of the subject is decided as *Pravara*, *Madhyama* and *Avara deha pramana* shown below.

ASSESSMENT OF AGNI:

As per *Madhava Nidana*, pre-validated self-assessment questionnaires were asked to participants for recording the *agni bala* (digestive strength) by following questions.

- ***Mandagni*** - Even small quantity of regular meal (easily digestible) may take longer time to digest and reduced appetite for the next scheduled meal.
- ***Samagni*** - Regular serving of meal consumed on regular intervals gets digested normally and good appetite for next scheduled meal.
- ***Teekshnagni*** - Regular serving size of regular meal gets digested quickly with frequent hunger pangs and making the person to eat at frequent intervals before next meal scheduled time. Even heavy meals get digested easily before the next scheduled meal time.

- *Vishamagni* is not taken in this study because of Disturbed digestive and metabolic activities e.g. *UdargataRoga*.⁸³

After assessment of *Dehapramana* and *Agni* next step is standardization of serving size of *Peyadi samsarjana Krama*. This is done by following method.

Method of Standardization of *Samsarjana Krama*-

Standardized *Samsarjana Krama* diet was derived after a rigorous and meticulous assessment carried in 81 subjects by following steps

1. The subjects were served the *Samsarjana Krama* diet as per regular serving size which is followed in KLE Ayurveda Hospital Belagavi.
2. Time taken for *Jeernahara Lakshana* (digestion) was recorded in hours and minutes.
3. Twelve-hour dose or serving size was calculated on the lines of *Sneha Pana* dose fixation which is as follows

$$\frac{\text{Quantity consumed}}{\text{Hours taken for Jeernahara Lakshana (digestion)}} \times \text{For 12 hours how many ml}$$

For example-

$$\frac{250\text{ml Peya (Rice gruel consumed)}}{3 \text{ hours}} \times 12 \text{ hours} = 1000\text{ml}$$

This 1000ml was served to particular subject as per his hunger in divided doses either 3 or more times and this 1000ml of *Peya (Ganji)* is the fixed maximum dose for that particular subject. But the subject should not exceed this quantity of fixed dose which is served to him.

1. Same calculation pattern was followed to all remaining *samsarjana* diets like *vilepi*, *akrita yusha*, *krita yusha*, *akrita mamsa rasa*, *krita mamsa rasa*.
2. Time taken for *jeeneharar lakshana (digestion)* in *Pravara*, *Madhyama* and *Avara Deha pramana* subjects was calculated as follows.
3. Out of 81 subjects enrolled in the study, 10 subjects were of *Avara Deha Pramana* category, 50 subjects with *Madhyama Deha pramana* whereas 21 Subjects were of *Pravara Deha pramana*. The average time taken by particular deha pramana subjects/patients for *jeernahara lakshana (digestion)* was calculated and it was considered as standardised serving size of that particular group.
4. Average time taken for *jeernehara lakshana* of particular category is calculated by following method. Summation of times taken for *Jeernahara Lakshana (Digestion)* of all subjects divided by number of subjects in that particular group. This will give average time taken by subjects of that particular category to digest particular *samsarjana* diet (*Peya/Vilepi* etc.). Based on this standard (average) time, the standard (required) serving size of particular category was calculated and fixed. This average is considered as standardised dose for that particular category.⁸³

Average Consumption of *Peyadi Samsarjana Krama* of all *Deha Pramana* is shown below.

Table. No. 07 Calculation of average dose in Subjects with Avara Dehapramana

Sl. No.	Patient Number	Ht in Cms	Score	Wt. Score	Score	Agni Type	Score	Total Score	Peya	Vilepi	A.K.Y	K. Y.	A.K. S. Y.	K.S.Y.
1	PhD/10	170	2	63	1	M A	2	5	640	461	177.8	533.3	165.51	400
2	PhD/76	147	1	42.5	2	M A	2	5	685	428	171	400	147.7	384
3	PhD/54	171	3	57	1	M A	2	6	738	666	165	417	147.7	400
4	PhD/48	150	2	47	2	M A	2	6	685	428	171	400	147.7	400
5	PhD/62	147	1	58	3	M A	2	6	800	666	165	600	162.71	400
6	PhD/69	140	1	73	3	M A	2	6	738	666.6	171.4	600	162.71	436
7	PhD/72	133	1	49	3	M A	2	6	564.7	500	171.4	436.3	147	400
8	PhD/75	143	1	51.6	3	M A	2	6	738	571	165	417	147.7	386
9	PhD/44	174	3	66	1	M A	2	6	685	600	177	505	172	436
10	PhD/52	171	3	61	1	M A	2	6	738	600	177	436.3	162.71	400
Average of Samsarjana Diet									701.2	592.1	171.2	474.5	158.34	404.2

Table. No. 08 Calculation of average dose in *Madhyama Dehapramana*

Sl. No.	Patient Number	Ht Cms	Score	Wt. Score	Score	Agni Type	Score	Total Score	Peya	Vilepi	A.K.Y	K. Y.	A.K. S. Y.	K.S.Y.
1	PhD/27	169	2	59	1	S A	4	7	1010	461.5	200	480	177.77	436
2	PhD/39	168	2	60	1	S A	4	7	1010	545	184	505	177.77	436
3	PhD/20	160	1	64	2	S A	4	7	1010	500	200	480	171.42	480
4	PhD/23	168	2	56	1	T A	6	9	1200	750	208.7	533	200	533
5	PhD/29	168	2	66	2	T A	6	10	1066.7	600	204.2	600	188.23	436.4
6	PhD/51	178	3	70	1	S A	4	8	1066	500	181	480	171.42	400
7	PhD/21	158	1	72	3	T A	6	10	1066.7	666	204	533	177.77	400
8	PhD/59	155	1	62	3	T A	6	10	1200	600	192	533	200	533
9	PhD/19	174	3	72.5	2	S A	4	9	1066.7	600	192	533	173.53	480
10	PhD/46	172	3	68	2	S A	4	9	1066	500	200	505	181	436.4
11	PhD/36	172	3	74	2	S A	4	9	1066	600	177	533	177.77	400
12	PhD/47	174	3	70	2	M A	2	7	800	545	184	480	162.71	342

13	PhD/2	164	2	97.1	3	S A	4	9	1066	500	200	505	184.61	360
14	PhD/3	165	2	72	3	M A	2	7	960	461	200	400	162.71	218.2
15	PhD/1	168	2	97.8	3	S A	4	10	1066.7	500	177	533	177.77	436.4
16	PhD/77	141	1	35.7	1	T A	6	8	800	1000	184	600	162.71	533.3
17	PhD/78	148	1	34.8	1	T A	6	8	1066	800	208.7	533	200	600
18	PhD/79	146	1	41	1	T A	6	8	960	800	184.6	505	184.61	600
19	PhD/14	147	1	52	2	S A	4	7	960	500	200	505	177.77	400
20	PhD/42	157	2	50	1	T A	6	9	1200	869	184	600	200	533.3
21	PhD/73	150	2	37.4	1	S A	4	7	738	571	208	533	162.71	400
22	PhD/16	158	3	47.4	1	S A	4	8	960	800	192	503	184.65	480
23	PhD/7	155	2	59	2	S A	4	8	1066	800	208.7	533	200	533.3
24	PhD/35	154	2	56	2	S A	4	8	960	800	184.6	505	184.61	600
25	PhD/17	146	1	54	3	S A	4	8	800	800	171.4	533	147.7	533.3
26	PhD/6	145	1	58.8	3	S A	4	8	800	800	173.5	505	184.6	533.3
27	PhD/33	164	3	43	1	T A	6	10	914	923	208	600	184.61	533.3

28	PhD/37	138	1	60	3	T A	6	10	960	923	218.2	600	177.77	600
29	PhD/40	142	1	77	3	T A	6	10	1200	923	200	505	200	533
30	PhD/43	137	1	60	3	T A	6	10	1200	869	200	600	200	533
31	PhD/8	156	2	78	3	M A	2	7	564.7	621.1	194.6	465.1	162.71	533.3
32	PhD/15	150	2	63.6	3	M A	2	7	800	600	171.4	600	171.42	480
33	PhD/28	156	2	83	3	M A	2	7	685.7	600	177.7	436.3	147.7	436.4
34	PhD/66	152	2	80	3	M A	2	7	800	750	177	533	147.7	457
35	PhD/64	152	2	62	3	M A	2	7	685	600	174	505	165.51	457
36	PhD/45	150	2	70	3	M A	2	7	600	571	192	480	147.7	480
37	PhD/49	155	2	76	3	M A	2	7	780	600	188	457	147.7	457
38	PhD/31	160	3	64.2	2	S A	4	9	800	869	192	685.7	165.51	480
39	PhD/38	149	2	55	3	S A	4	9	800	600	171.4	533.3	165.51	533.3
40	PhD/65	148	2	57	3	S A	4	9	960	600	184	505	165.51	533.3
41	PhD/70	149	2	60	3	S A	4	9	996.9	705.8	172.6	600	165.46	433.9
42	PhD/41	159	3	91	3	M A	2	8	600	400	150	457	147.7	480

43	PhD/5	167	2	65	2	S A	4	8	800	600	172.6	600	165.51	457
44	PhD/60	159	3	89	3	M A	2	8	800	545	171.4	480	147.7	400
45	PhD/9	162	3	83	3	S A	4	10	914	800	200	480	177.77	457
46	PhD/25	158	3	80	3	S A	4	10	960	666.7	188	600	162.71	533.3
47	PhD/74	146	1	52	3	S A	4	8	800	660	165	480	177.77	480
48	PhD/71	160	3	46	1	S A	4	8	800	600	181	533	165.51	480
49	PhD/80	146	2	34.8	1	T A	6	9	1200	800	208	600	200	533.3
50	PhD/81	146	1	41	2	T A	6	9	960	800	184	505	184	533.3
Average of Samsarjana Diet									932.22	669.9	188.8	526.6	174.35	478.2

Table. 09. Subjects with *Pravara Dehapramana*

Sl. No.	Patient Number	Ht in Cms	Score	Wt. Score	Score	Agni Type	Score	Total Score	<i>Peya</i>	<i>Vilepi</i>	<i>A.K.Y</i>	<i>K. Y.</i>	<i>A.K. S. Y.</i>	<i>K.S.Y.</i>
1	PhD/22	167	2	108	3	T A	6	11	1200	600	200	600	173	342.9
2	PhD/32	164	2	86	3	T A	6	11	1066.7	545	208.6	539	188	505
3	PhD/57	166	2	99.4	3	T A	6	11	1010	666	200	533	195	533
4	PhD/11	176	3	76.2	2	T A	6	11	1200	750	191	400	200	400
5	PhD/53	174	3	86	3	T A	6	12	1200	600	188	505	200	436
6	PhD/30	172	3	85	3	T A	6	12	1200	631.5	218	533.3	200	480
7	PhD/61	171	3	81	3	T A	6	12	1200	666	204.2	539	192	533
8	PhD/24	158	3	61.4	2	T A	6	11	960	1091	218	600	200	480
9	PhD/4	148	2	57.2	3	T A	6	11	1200	923	200	533.3	192	515
10	PhD/12	148	2	56	3	T A	6	11	960	1091	218	604	168.42	600
11	PhD/18	153	2	62.3	3	T A	6	11	1129	800	200	600	200	480
12	PhD/26	154	2	66.1	3	T A	6	11	914.3	923	204	480	184.61	505.3

13	PhD/55	150	2	87	3	T A	6	11	872	923	208	604	192	872
14	PhD/67	157	2	89	3	T A	6	11	1200	800	200	800	192	234.1
15	PhD/58	156	2	71	3	T A	6	11	1200	923	200	604	200	564
16	PhD/68	157	2	89	3	T A	6	11	1200	800	188	600	192	685
17	PhD/13	159	3	81	3	T A	6	12	1066	923	200	600	208.69	564
18	PhD/34	160	3	84	3	T A	6	12	1200	1091	184.6	604	184.6	640
19	PhD/50	174	3	95	3	T A	6	12	914	923	200	685.7	218	564
20	PhD/56	162	3	80	3	T A	6	12	1600	1091	184.6	533	181	640
21	PhD/63	163	3	82	3	T A	6	12	1200	923	182	600	200	533.3
Average of Samsarjana Diet									1128.2	842.07	199.86	576.1	193.4	528.9

Note: MA – Mandagni, SA- Samagni and TA-Teekshnagni

Table. No. 10 Standardised dose of *Peyadi Samsarjana Krama* as per *Deha**Pramana and Agni*

Sl. No.	<i>Deha Pramana</i>	<i>Peya</i>	<i>Vilepi</i>	<i>A.K.Y*</i>	<i>K. Y.**</i>	<i>A.K.S.Y.***</i>	<i>K.S.Y.****</i>
1	<i>Avara</i>	701.2	592.1	171.2	474.5	158.34	404.2
2	<i>Madhyama</i>	932.22	669.9	188.8	526.6	174.35	478.2
3	<i>Pravara</i>	1128.2	842.07	199.86	576.1	193.4	528.9

*Akrita Yusha, ** Krita Yusha, ***Akrita Soya Yusha, ****Krita Soya Yusha

Note: These above averages of *Peya*, *Vilepi*, *Akrita Yusha*, *Kruta Yusha*, *Akruta Soya Yusha* and *Kruta Soya Yusha* are considered as Standard Dose for those particular *Deha Pramana* with *Madhyama shudhi* subjects and served to group 2/SSS group participants.

3. Preparation of *Peyadi Samsarjana Krama*: All the preparations used in *Samsarjana Krama* were prepared as per the preparation methods explained in the classics. Standard Operative Procedure (SOP) of *Annakalapana*s used for *Samsarjana Krama* are as follows.

1. METHOD OF PREPARATION OF *PEYA*:⁸⁴

INTRODUCTION –

It is one of the *Aharakalpana* which is mentioned in *Kritaannavarga* i.e., the basic food preparations in Ayurveda.

REQUIREMENTS – Cooker, Steel Vessel - 1, Big Spoon - 1, LPG Stove -1, LPG Cylinder - 1, Lighter-1, Holder-1, Plate-1, Spoon-1

INGREDIENTS: 1:14: *Shali*/ Raw rice – 100gms, Water–1400ml, 1:14 parts (1part rice:8parts water)

POORVA KARMA – Clean the raw rice by removing dust, sand etc. Wash the raw rice with normal water

PRADHANA KARMA – Take 100gms of washed raw rice in a clean steel vessel containing 1400ml of water. Keep this vessel in the cooker and close the cooker lid and keep it on medium flame. Continue the boiling process till the 5-7 whistles of cooker and remove it from flame, keep for self-cooling

PASCHAT KARMA – *Peya* is added into hot box and properly packed with patient name, bed number and served.

BENEFITS: Pathya, Deepan, Pachana.⁸⁵

2. METHOD OF PREPARATION OF VILEPI:⁸⁶

INTRODUCTION – It is one of the *Aharakalpana* which is mentioned in *Kritaannavarga* i.e., the basic food preparations in Ayurveda.

REQUIREMENTS –Cooker, Steel Vessel-1, Big Spoon - 1, LPG Stove -1, LPG Cylinder 1, Lighter-1, Holder-1, Plate-1, Spoon-1

INGREDIENTS: 1:4 *Shali*/Raw rice – 100gms, Water–400ml, 1:4 parts (1part rice:4parts water)

POORVA KARMA – Clean the raw rice by removing dust, sand etc.Wash the raw rice with normal water

PRADHANA KARMA – Take 100gms of washed raw rice in a clean steel vessel containing 400ml of water and kKeep this vessel in the cooker. Close the cooker lid and keep it on medium flame and continue the boiling process till the 4 whistles of cooker. Remove it from flame, keep for self-cooling

PASCHAT KARMA – *Vilepi* is added into hot box and properly packed with patient name, bed number and served.

BENEFITS: Pathya, Deepan, Pachana , Basti shodhan.⁸⁷

3. METHOD OF PREPARATION OF AKRITA YUSHA:⁸⁸

INTRODUCTION – It is one of the *Aharakalpana* which is mentioned in *Kritaannavarga* i.e., the basic food preparations in Ayurveda. Akrita is a Without salt and Sneha

REQUIREMENTS –Cooker, Steel Vessel-1, Big Spoon-1, LPG Stove -1, LPG Cylinder - 1, Lighter-1, Holder-1, Plate-1, Spoon-1

INGREDIENTS: 1:16 Raw *Mudga* (Green gram) – 48 gms, Water-768ml, 1:16 parts (1part mudga:16parts water)

POORVA KARMA – Clean the raw *mudga* by removing dust, sand etc. and wash the raw *mudga* with normal water

PRADHANA KARMA – Take 48gms of washed raw *mudga* in a clean steel vessel containing 768ml of water. Keep this vessel in the cooker and Close the cooker lid and keep it on medium flame. Continue the boiling process till the 5 whistles of cooker and remove it from flame, keep for self cooling.

PASCHAT KARMA – *Akrita yusha* is added into hot box and properly packed with patient name, bed number & served.

4. METHOD OF PREPARATION OF KRITA YUSHA

INTRODUCTION – It is one of the *Aharakalpana* which is mentioned in *Kritaannavarga* i.e., the basic food preparations in Ayurveda.

REQUIREMENTS –Cooker, Steel Vessel-1, Big Spoon-1, LPG Stove -1, LPG Cylinder - 1, Lighter-1, Holder-1, Plate-1, Spoon-1

INGREDIENTS: Raw *Mudga* (Green gram)–48gms, Water–768ml, *Ghrita/Taila* (Ghee/edible oil)–2 spoon (10ml), *Saindhava* (rock salt)–2gms, *Ardra kalka* (wet ginger)– 3gms, *Pippali Churna* (pepper powder)–2gms, 1:16 parts (1part *mudga*:16parts water)

POORVA KARMA – Clean the raw *mudga* by removing dust, sand etc. and wash the raw *mudga* with normal water

PRADHANA KARMA – Take a *Ghrita/Taila* in *paka patra* (steel vessel) and keep on medium flame. Add paste of *Ardra k* and *pippali* as quantity mentioned above fry for 2-3 minutes. Then add 48gms of washed raw *mudga* & 768ml of water along with *Saindhava* and keep this steel vessel in the cooker. Close the cooker lid and start boiling on medium flame and continue the boiling process till the 5 whistles of cooker and remove it from flame & keep it for self-cooling.

PASCHAT KARMA: *Krita yusha* is added into hot box & properly packed with patient name, bed number & served.

BENEFITS: With salt and *Sneha Kaphahara, Deepana, Pathya, Hridya*.⁸⁹

5. METHOD OF PREPARATION OF AKRITA MAMSA RASA

INTRODUCTION – It is one of the *Aharakalpana* which is mentioned in *Kritaannavarga* i.e., the basic food preparations in Ayurveda.

REQUIREMENTS–Cooker, Steel Vessel-1, Big Spoon-1, LPG Stove-1, LPG Cylinder-1, Lighter-1, Holder-1, Plate-1, Spoon-1, sieve-1

INGREDIENTS: 1: Raw *Mamsa* (chopped meat)–100gms, Water-400ml, 1:4 parts (1part chopped meat: 4parts water),

POORVA KARMA – Clean & wash the raw *mamsa* (chopped meat) with normal water

PRADHANA KARMA–Take 100gms of washed raw *mamsa* (chopped meat) in a clean steel vessel containing 400ml of water.^{90 (21)} Keep this steel vessel in the cooker and close the cooker lid and start boiling on medium flame and continue the boiling process till the 5 whistles of cooker and Remove it from flame & filter through a sieve

PASCHAT KARMA – *Akrita mamsa rasa* is added into hot box and properly packed with patient name, bed number & served.

6. METHOD OF PREPARATION OF KRITA MAMSA RASA:⁹⁰

INTRODUCTION – It is one of the *Aharakalpana* which is mentioned in *Kritaannavarga* i.e., the basic food preparations in Ayurveda.

REQUIREMENTS –Cooker, Steel Vessel-2, Big Spoon-1, LPG Stove-1, LPG Cylinder – 1, Lighter-1, Holder-1, Plate-1, Spoon-1, sieve-1

INGREDIENTS: Raw *Mamsa* (chopped meat)–100gms, Water-400ml, *Ghrita/Taila* Ghee/edible oil)-2 spoon (10ml), *Saindhava* (rock salt)–2gms, *Ardraka kalka*(ginger)–3gms *Pippali Churna* (pepper powd)–2gms, 1:4 parts (1part chopped meat:4parts water)

POORVA KARMA – Clean & wash the raw *mamsa* (chopped meat) with normal water

PRADHANA KARMA–Take a *Ghrita/Taila* in *paka patra* (steel vessel) and keep on medium flame. Add paste of *Ardraka* and *pippali* as quantity mentioned above fry it for 2-3 minutes.Then add 100gms of washed chopped meat & 400ml of water along

with *Saindhava*, Keep this steel vessel in the cooker and close the cooker lid and start boiling on medium flame. Continue the boiling process till the 5 whistles of cooker and remove it from flame & filter through sieve.

PASCHAT KARMA – *Krita mamsa rasa* is added into hot box and properly packed with Patient name, bed number and serve it hot.

Benefits: - With salt and *Sneha Vatapitashramhara, Balavardhaka, Hridya*.⁹¹

7. METHOD OF PREPARATION OF AKRITA SOYA YUSHA

REQUIREMENTS-Steel Vessel -1, Big Spoon-1, LPG Stove-1, LPG Cylinder-1, Lighter-1, Holder-1, Plate-1, Spoon-1, Pan-1

INGREDIENTS: Soya chunks–25gms, Water-200ml, 1:8 parts (1part Soya chunks : 8parts water),

POORVA KARMA–Clean & wash the soya chunks with normal water

PRADHANA KARMA–Take 25gms of washed soya chunks in a clean steel vessel containing 200ml of water. Boil it for 10 minutes on medium flame and stop the flame & keep it for self Cooling

PASCHAT KARMA-*Akrita* soya soup is added into hot box and properly packed with patient name, bed number & serve hot.

8. METHOD OF PREPARATION OF KRITA SOYA YUSHA

INTRODUCTION–It is one of the *Aharakalpana* which is mentioned in *Kritaannavarga* i.e., the basic food preparations in *Ayurveda*.

REQUIREMENTS–Steel Vessel-1, Big Spoon-1, LPG Stove-1, LPG Cylinder-1, Lighter-1, Holder-1, Plate-1, Spoon-1, Pan-1

INGREDIENTS: Soya chunks–25gms, Water-200ml, *Ghrita/Taila* (Ghee/edible oil)– 5ml *Saindhava* (rock salt)–2gms, *Ardraka kalka* (wet ginger)–3gms, *Pippali Churna* (piper longum)– 2gms, 1:8 parts (1part Soya chunks:8parts water)

POORVA KARMA – Clean & Wash the Soya chunks with normal water

PRADHANA KARMA – Take a *Ghrita/Taila* in *paka patra* (steel vessel) and keep on medium flame. Add paste of *Ardraka* and *pippali* as quantity mentioned above fry it for 2-3 minutes. Then add 25gms of washed soya chunks & 200ml of water along with *Saindhava*, Continue the boiling process for 10 minutes. Remove it from flame & keep it for self cooling

PASCHAT KARMA –*Krita* soya soup is added into hot box and properly packed with patient name, bed number and serve it hot.

Pictures of Peyadi Samsarjana Krama Preparations

Peya



Vilepi



Akrita Yusha



Krita Yusha



Akrita Soya Yusha



Krita Soya Yusha



RESULTS AND OBSERVATIONS

Table. No. 11 Standardized quantity of Serving Size of *Peyadi Samsarjana Krama* in *Pravara Samagni* subjects

<i>Pravara samagni</i>	Mean	95% Confidence Interval		correlation	Coefficient of determination
		LL	UL		
Body Mass Index	32.3	20.6	44.0		
<i>Peya</i>	793.1	329.3	1257.0	0.32	10.34
<i>Veleti</i>	492.3	231.4	753.3	0.45	20.37
<i>Akruta</i>	164.8	143.1	186.5	0.05	0.30
<i>Kruta Mudga Yusha</i>	485.2	125.4	844.9	0.03	0.06
<i>Akrita Soya Yusha</i>	240.1	1.1	481.2	0.82	66.82
<i>Krita Soya Yusha</i>	453.5	121.0	786.1	0.32	10.20

This table presents the standardized quantities of different components of *Peyadi Samsarjana Krama* for subjects with *Pravara Samagni* (high digestive power). The table also includes statistical measures such as the 95% confidence interval, correlation, and coefficient of determination.

Table. No. 12 Standardized quantity of Serving Size of *Peyadi Samsarjana Krama* in *Madhyama Samagni* subjects

<i>Madhyama Samagni</i>	Mean	95% Confidence Interval		correlation between	Coefficient of determination
		LL	UL		
Body Mass Index	25.4	14.8	36.1		
<i>Peya</i>	1078.6	652.3	1505.0	-0.371	13.8
<i>Velepi</i>	649.2	375.5	922.8	0.682	46.5
<i>Akruta</i>	234.0	53.3	521.3	-0.140	2.0
<i>Kruta Mudga Yusha</i>	514.3	399.5	629.1	-0.296	8.8
<i>Akrita Soya Yusha</i>	187.7	163.4	212.0	-0.320	10.2
<i>Krita Soya Yusha</i>	524.1	332.9	715.3	0.069	0.5

This table presents the standardized quantities of different components of *Peyadi Samsarjana Krama* for subjects with *Madhyama Samagni* (moderate digestive power). It includes statistical measures such as the 95% confidence interval, correlation, and coefficient of determination.

Table. No.13 Standardized quantity of Serving Size of *Peyadi Samsarjana Krama* in *Madhyama Teekshnagni* subjects

<i>Madhyama teekshnagni</i>	MEAN	LL	UL
<i>Peya</i>	1249.7	513.4	1986.1
<i>Velepi</i>	651.4	322.1	980.7
<i>Akruta</i>	180.9	159.4	202.5
<i>Kruta Mudga Yusha</i>	522.7	355.9	689.4
<i>Akrita Soya Yusha</i>	188.5	158.1	218.9
<i>Krita Soya Yusha</i>	473.1	230.5	715.7

This table presents the standardized quantities of different components of *Peyadi Samsarjana Krama* for subjects with *Madhyama Teekshnagni* (moderately intense digestive power). The table includes the mean serving sizes along with their lower (LL) and upper (UL) 95% confidence interval bounds.

Table.No.14. Distribution of subjects as per variates undergone in RSS and SSS groups

Variates		Regular Serving Size of <i>Samsarjana Krama</i>		Standardised Serving Size of <i>Samsarjana Krama</i>		Total	
		n1	%	n2	%	N	%
Sex	Male	43	35.8	56	46.7	99	41.3
	Female	77	64.2	64	53.3	141	58.8
Occupation	Job	48	40	40	33.3	88	36.7
	Housewife	33	27.5	29	24.2	62	25.8
	Business	14	11.7	15	12.5	29	12.1
	Student	18	15	30	25	48	20
	Farmer	7	5.8	6	5	13	5.4
SocioEcon omic status	Upper Class	12	10	12	10	24	10
	Middle Class	107	89.2	105	87.5	212	88.3
	Lower Middle Class	1	0.8	3	2.5	4	1.7
Religion	Hindu	110	91.7	109	90.8	219	91.3
	Muslim	3	2.5	8	6.7	11	4.6
	Christian	4	3.3	2	1.7	6	2.5
	Jain	3	2.5	1	0.8	4	1.7

This table outlines the distribution of subjects according to various demographic and socioeconomic variates in the Regular Serving Size (RSS) and Standardized Serving Size (SSS) groups of Samsarjana Krama. The distribution is categorized by sex, occupation, socioeconomic status, and religion, providing a comparative overview between the two groups.

Table. No. 15. Distribution of subjects as *Ahara-Vihara* in RSS and SSS groups

<i>Ahara-Vihara</i>		RSS		SSS		Total	
		n1	%	n2	%	n	%
Diet	Veg	39	32.5	34	28.3	73	30.4
	Mixed	81	67.5	86	71.7	167	69.6
<i>Ahara Matra</i>	<i>Alpa</i>	9	7.5	5	4.2	14	5.8
	<i>Madhyama</i>	100	83.3	97	80.8	197	82.1
	<i>Pravara</i>	11	9.2	18	15	29	12.1
<i>Ahara Sevana Kala</i>	Two meals per Day	12	10.0	14	11.7	26	10.8
	Three meals per day	93	77.5	89	74.2	182	75.8
	More than 3 meals per day	15	12.5	17	14.2	32	13.3
Sleep	Sound	112	93.3	117	97.5	229	95.4
	Disturbed	8	6.7	3	2.5	11	4.6
Life style	Moderate	43	35.8	49	40.8	92	38.3
	Household work	13	10.8	10	8.3	23	9.6
	Sedentary	60	50	55	45.8	115	47.9
	Heavy	4	3.3	6	5	10	4.2
<i>Ahara Shakti</i>	<i>Pravara</i>	14	11.7	14	11.7	28	11.7
	<i>Madhyama</i>	105	87.5	104	86.7	209	87.1
	<i>Avara</i>	1	0.8	2	1.7	3	1.3

<i>Koshtha</i>	<i>Mrudu</i>	6	5	7	5.8	13	5.4
	<i>Madhyama</i>	106	88.3	104	86.7	210	87.5
	<i>Krura</i>	8	6.7	9	7.5	17	7.1
<i>Dehapramana</i>	<i>Avara</i>	15	12.5	11	9.2	26	10.8
	<i>Madhyama</i>	74	61.7	70	58.3	144	60
	<i>Pravara</i>	31	25.8	39	32.5	70	29.2
<i>Agni</i>	<i>Mandagni</i>	25	20.8	25	20.8	50	20.8
	<i>Samagni</i>	73	60.8	65	54.2	138	57.5
	<i>Teekshnagni</i>	22	18.3	30	25	52	21.7

Note: RSS-Regular Serving Size of *Samsarjana Krama* group, SS- Standardised Serving Size of *Samsarjana Krama* group

This table provides an overview of the distribution of subjects based on various Ahara-Vihara (dietary and lifestyle) factors in the Regular Serving Size (RSS) and Standardized Serving Size (SSS) groups of *Samsarjana Krama*. The distribution is analyzed according to diet type, meal frequency, sleep quality, lifestyle, digestive power (Ahara Shakti), bowel movement type (Koshtha), body constitution (Dehapramana), and digestive fire (Agni).

**Table. No. 16. Distribution of subjects as per *Prakruti* & *Shodhana* undergone in
RSS and SSS groups**

<i>Prakruti, Vikrutui & Shodhana</i>		Regular Serving Size of <i>Samsarjana Krama</i> group		Standardised Serving Size of <i>Samsarjana Krama</i> group		Total	
		n1	%	n2	%	n	%
<i>Prakruti</i>	<i>Vatapittaja</i>	49	40.8	50	41.7	99	41.3
	<i>Kaphapittaja</i>	14	11.7	8	6.7	22	9.2
	<i>Pittakaphaja</i>	42	35	48	40	90	37.5
	<i>Vatakaphaja</i>	11	9.2	10	8.3	21	8.8
	<i>Kaphavataja</i>	4	3.3	3	2.5	7	2.9
	<i>Pittavataja</i>	0	0	1	0.8	1	0.4
<i>Vikruti</i>	<i>Vatakaphaja</i>	30	25	31	25.8	61	25.4
	<i>Kaphapittaja</i>	15	12.5	10	8.3	25	10.4
	<i>Pittakaphaja</i>	43	35.8	39	32.5	82	34.2
	<i>Vatapittaja</i>	31	25.8	36	30	67	27.9
	<i>Pittavataja</i>	1	0.8	4	3.3	5	2.1
<i>Shodhana Undergone</i>	<i>Virechana</i>	82	68.3	79	65.8	161	67.1
	<i>Vamana</i>	38	31.7	41	34.2	79	32.9

This table details the distribution of subjects based on their Prakruti (constitution), Vikruti (current state of imbalance), and the type of Shodhana (detoxification) therapy undergone, in the Regular Serving Size (RSS) and Standardized Serving Size (SSS) groups of Samsarjana Krama.

The most common constitutions among the subjects are Vatapittaja and Pittakaphaja, with Vatapittaja being slightly more prevalent. The least common constitution is Pittavataja. The most common state of imbalance is Pittakaphaja, followed by Vatapittaja. The least common state of imbalance is Pittavataja. The majority of subjects have undergone Virechana therapy, with a similar proportion in both the RSS and SSS groups. Vamana therapy is less common but still significant.

Table. No.17. Descriptive statistics of subject's variates in RSS and SSS Groups

Group	N	Mean	Std. Deviation	Minimum	Maximum
Regular Serving Size of Samsarjana Krama group					
Age	120	34.2	8.3	18	50
Ht	120	159.3	8.7	137	178
Wt	120	67.9	11.7	42	105
BMI	120	26.9	5.1	16.5	40.7
FBS	120	94.5	5.4	75	110
PPBS	120	118.3	8.2	100	140
RBS	120	138.7	9.2	121	165
Standardised Serving Size of Samsarjana Krama group					
Age	120	33.1	8.7	18	50

Ht	120	161.6	8.0	140	180
Wt	120	67.1	12.6	39	99.4
BMI	120	25.7	5.0	16	40.4
FBS	120	96.1	6.6	80	110
PPBS	120	119.9	7.4	108	142
RBS	120	143.0	13.5	121	170
Total					
Age	240	33.6	8.5	18	50
Ht	240	160.4	8.4	137	180
Wt	240	67.5	12.1	39	105
BMI	240	26.3	5.1	16	40.7
FBS	240	95.3	6.1	75	110
PPBS	240	119.1	7.8	100	142
RBS	240	140.8	11.7	121	170

Groups Overview

This table presents the descriptive statistics of various health-related variates in two groups: the Regular Serving Size of Samsarjana Krama (RSS) group and the Standardized Serving Size of Samsarjana Krama (SSS) group. Each group consists of 120 subjects, making a total of 240 subjects.

Age

- **RSS Group:** The average age is 34.2 years, with a standard deviation of 8.3 years. The age range is from 18 to 50 years.

- **SSS Group:** The average age is slightly lower at 33.1 years, with a standard deviation of 8.7 years. The age range remains the same (18 to 50 years).
- **Total:** Combining both groups, the average age is 33.6 years with a standard deviation of 8.5 years.

Height (Ht)

- **RSS Group:** The average height is 159.3cm, with a standard deviation of 8.7cm. Heights range from 137 to 178cm.
- **SSS Group:** The average height is higher at 161.6cm, with a standard deviation of 8.0cm. Heights range from 140 to 180cm.
- **Total:** The combined average height is 160.4cm with a standard deviation of 8.4cm.

Weight (Wt)

- **RSS Group:** The average weight is 67.9kg, with a standard deviation of 11.7kg. Weights range from 42 to 105kg.
- **SSS Group:** The average weight is slightly lower at 67.1kg, with a higher standard deviation of 12.6kg. Weights range from 39 to 99.4kg.
- **Total:** The combined average weight is 67.5kg with a standard deviation of 12.1kg.

Body Mass Index (BMI)

- **RSS Group:** The average BMI is 26.9, with a standard deviation of 5.1. BMI values range from 16.5 to 40.7.
- **SSS Group:** The average BMI is lower at 25.7, with a similar standard deviation of 5.0. BMI values range from 16 to 40.4.
- **Total:** The combined average BMI is 26.3 with a standard deviation of 5.1.

Fasting Blood Sugar (FBS)

- **RSS Group:** The average FBS is 94.5mg/dL, with a standard deviation of 5.4mg/dL. FBS values range from 75 to 110mg/dL.
- **SSS Group:** The average FBS is slightly higher at 96.1mg/dL, with a higher standard deviation of 6.6 mg/dL. FBS values range from 80 to 110mg/dL.
- **Total:** The combined average FBS is 95.3mg/dL with a standard deviation of 6.1mg/dL.

Postprandial Blood Sugar (PPBS)

- **RSS Group:** The average PPBS is 118.3mg/dL, with a standard deviation of 8.2mg/dL. PPBS values range from 100 to 140mg/dL.
- **SSS Group:** The average PPBS is slightly higher at 119.9mg/dL, with a lower standard deviation of 7.4mg/dL. PPBS values range from 108 to 142mg/dL.
- **Total:** The combined average PPBS is 119.1mg/dL with a standard deviation of 7.8 mg/dL.

Random Blood Sugar (RBS)

- **RSS Group:** The average RBS is 138.7mg/dL, with a standard deviation of 9.2mg/dL. RBS values range from 121 to 165mg/dL.
- **SSS Group:** The average RBS is higher at 143.0mg/dL, with a significantly higher standard deviation of 13.5mg/dL. RBS values range from 121 to 170mg/dL.
- **Total:** The combined average RBS is 140.8mg/dL with a standard deviation of 11.7 mg/dL.

The data indicates slight differences between the RSS and SSS groups across all variates. The SSS group tends to have slightly lower averages in age, weight, BMI, and slightly higher averages in height and blood sugar levels (FBS, PPBS, RBS). The

combined data for all subjects provides a comprehensive overview of the variates with consistent averages and ranges within normal expected deviations.

Table. No.18. Result of independent t-test in SSS and RSS groups according to selected variates

Group		N	Mean	SD	SE	t-test	df	p-Value
Age	Regular Serving Size of <i>Samsarjana Krama</i> group	120	34.16	8.29	0.757	0.98	238	0.328
	Standardised Serving Size of <i>Samsarjana Krama</i> group	120	33.08	8.70	0.794			
Ht	Regular Serving Size of <i>Samsarjana Krama</i> group	120	159.30	8.69	0.793	-2.141	238	0.033
	Standardised Serving Size of <i>Samsarjana Krama</i> group	120	161.60	7.98	0.728			
Wt	Regular Serving Size of <i>Samsarjana Krama</i> group	120	67.91	11.69	1.067	0.54	238	0.59
	Standardised Serving Size of <i>Samsarjana Krama</i> group	120	67.06	12.59	1.150			
BMI	Regular Serving Size of <i>Samsarjana Krama</i> group	120	26.86	5.08	0.463	1.735	238	0.084
	Standardised Serving Size of <i>Samsarjana Krama</i> group	120	25.74	4.98	0.455			
FBS	Regular Serving Size of <i>Samsarjana Krama</i> group	120	94.50	5.43	0.496	-1.986	238	0.048
	Standardised Serving Size of <i>Samsarjana Krama</i> group	120	96.05	6.61	0.603			

PPBS	Regular Serving Size of <i>Samsarjana Krama</i> group	120	118.26	8.22	0.751	-1.601	238	0.111
	Standardised Serving Size of <i>Samsarjana Krama</i> group	120	119.88	7.40	0.675			
RBS	Regular Serving Size of <i>Samsarjana Krama</i> group	120	138.66	9.16	0.836	-2.901	238	0.004
	Standardised Serving Size of <i>Samsarjana Krama</i> group	120	142.98	13.48	1.231			

This table presents the results of independent t-tests comparing the means of selected variates between the Regular Serving Size of *Samsarjana Krama* (RSS) group and the Standardized Serving Size of *Samsarjana Krama* (SSS) group. Each group consists of 120 subjects.

Age

- Mean (RSS): 34.16 years
- Mean (SSS): 33.08 years
- t-value: 0.98
- Degrees of Freedom (df): 238
- p-value: 0.328
- **Interpretation:** The difference in age between the RSS and SSS groups is not statistically significant ($p > 0.05$).

Height (Ht)

- Mean (RSS): 159.30 cm
- Mean (SSS): 161.60 cm
- t-value: -2.141
- Degrees of Freedom (df): 238
- p-value: 0.033

- **Interpretation:** The difference in height between the RSS and SSS groups is statistically significant ($p < 0.05$), with the SSS group being taller on average.

Weight (Wt)

- Mean (RSS): 67.91 kg
- Mean (SSS): 67.06 kg
- t-value: 0.54
- Degrees of Freedom (df): 238
- p-value: 0.59
- **Interpretation:** The difference in weight between the RSS and SSS groups is not statistically significant ($p > 0.05$).

Body Mass Index (BMI)

- Mean (RSS): 26.86
- Mean (SSS): 25.74
- t-value: 1.735
- Degrees of Freedom (df): 238
- p-value: 0.084
- **Interpretation:** The difference in BMI between the RSS and SSS groups is not statistically significant ($p > 0.05$), though it is close to the threshold for significance.

Fasting Blood Sugar (FBS)

- Mean (RSS): 94.50 mg/dL
- Mean (SSS): 96.05 mg/dL
- t-value: -1.986
- Degrees of Freedom (df): 238
- p-value: 0.048

- **Interpretation:** The difference in FBS between the RSS and SSS groups is statistically significant ($p < 0.05$), with the SSS group having higher FBS levels on average.

Postprandial Blood Sugar (PPBS)

- Mean (RSS): 118.26 mg/dL
- Mean (SSS): 119.88 mg/dL
- t-value: -1.601
- Degrees of Freedom (df): 238
- p-value: 0.111
- Interpretation: The difference in PPBS between the RSS and SSS groups is not statistically significant ($p > 0.05$).

Random Blood Sugar (RBS)

- Mean (RSS): 138.66 mg/dL
- Mean (SSS): 142.98 mg/dL
- t-value: -2.901
- Degrees of Freedom (df): 238
- p-value: 0.004

Interpretation: The difference in RBS between the RSS and SSS groups is statistically significant ($p < 0.01$), with the SSS group having higher RBS levels on average.

The independent t-test results show significant differences in height, fasting blood sugar, and random blood sugar between the Regular Serving Size and Standardized Serving Size groups. Specifically, the SSS group is taller and has higher fasting and random blood sugar levels. The differences in age, weight, BMI, and postprandial blood sugar are not statistically significant. These results suggest that the serving size variations may impact certain physiological measures but not others.

Table. No. 19. Results of Generalized Linear model: Effect of SSS over RSS on blood glucose levels

Parameter	B	Std. Error	Sig.	95% Confidence Interval	
				Lower Bound	Upper Bound
Dependent Variable: FBS					
Intercept	93.101	1.239	0.00	90.66	95.54
Groups					
Regular Serving Size					
Standardised Serving Size	1.446	0.781	0.066	-0.09	2.99
Dependent Variable: PPBS					
Intercept	116.361	1.598	0.00	113.212	119.51
Groups					
Regular Serving Size					
Standardized Serving Size	1.799	1.008	0.076	-0.188	3.786
Dependent Variable: RBS					
Intercept	134.243	2.357	0.00	129.599	138.888
Groups					
Regular Serving Size					
Standardised Serving Size	4.37	1.487	0.004	1.44	7.3

This table presents the results of a Generalized Linear Model (GLM) analysis examining the effect of the Standardized Serving Size (SSS) group compared to the Regular Serving Size (RSS) group on blood glucose levels. The analysis covers three dependent variables: Fasting Blood Sugar (FBS), Postprandial Blood Sugar (PPBS), and Random Blood Sugar (RBS).

Dependent Variable: Fasting Blood Sugar (FBS)

- **Intercept:**
 - B: 93.101
 - Std. Error: 1.239
 - p-value (Sig.): 0.00
 - 95% Confidence Interval: 90.66 to 95.54
- **Groups:**
 - **Standardized Serving Size (SSS):**
 - B: 1.446
 - Std. Error: 0.781
 - p-value (Sig.): 0.066
 - 95% Confidence Interval: -0.09 to 2.99
- **Interpretation:** The intercept indicates the average FBS level in the RSS group is 93.101 mg/dL. The SSS group shows a higher FBS by 1.446 mg/dL, but this difference is not statistically significant ($p > 0.05$).

Dependent Variable: Postprandial Blood Sugar (PPBS)

- **Intercept:**
 - B: 116.361
 - Std. Error: 1.598
 - p-value (Sig.): 0.00
 - 95% Confidence Interval: 113.212 to 119.51
- **Groups:**
 - **Standardized Serving Size (SSS):**
 - B: 1.799
 - Std. Error: 1.008

- p-value (Sig.): 0.076
- 95% Confidence Interval: -0.188 to 3.786
- **Interpretation:** The intercept indicates the average PPBS level in the RSS group is 116.361 mg/dL. The SSS group shows a higher PPBS by 1.799 mg/dL, but this difference is not statistically significant ($p > 0.05$).

Dependent Variable: Random Blood Sugar (RBS)

- **Intercept:**
 - o B: 134.243
 - o Std. Error: 2.357
 - o p-value (Sig.): 0.00
 - o 95% Confidence Interval: 129.599 to 138.888
- **Groups:**
 - o **Standardized Serving Size (SSS):**
 - B: 4.37
 - Std. Error: 1.487
 - p-value (Sig.): 0.004
 - 95% Confidence Interval: 1.44 to 7.3
- **Interpretation:** The intercept indicates the average RBS level in the RSS group is 134.243 mg/dL. The SSS group shows a significantly higher RBS by 4.37 mg/dL ($p < 0.01$), indicating a statistically significant effect.

The GLM results indicate that:

- The effect of the SSS group on FBS and PPBS is not statistically significant, with p-values of 0.066 and 0.076, respectively.

- The effect of the SSS group on RBS is statistically significant, with a p-value of 0.004, indicating that the SSS group has a higher average RBS level compared to the RSS group.

These findings suggest that the standardized serving size significantly influences random blood sugar levels but does not have a significant effect on fasting and postprandial blood sugar levels.

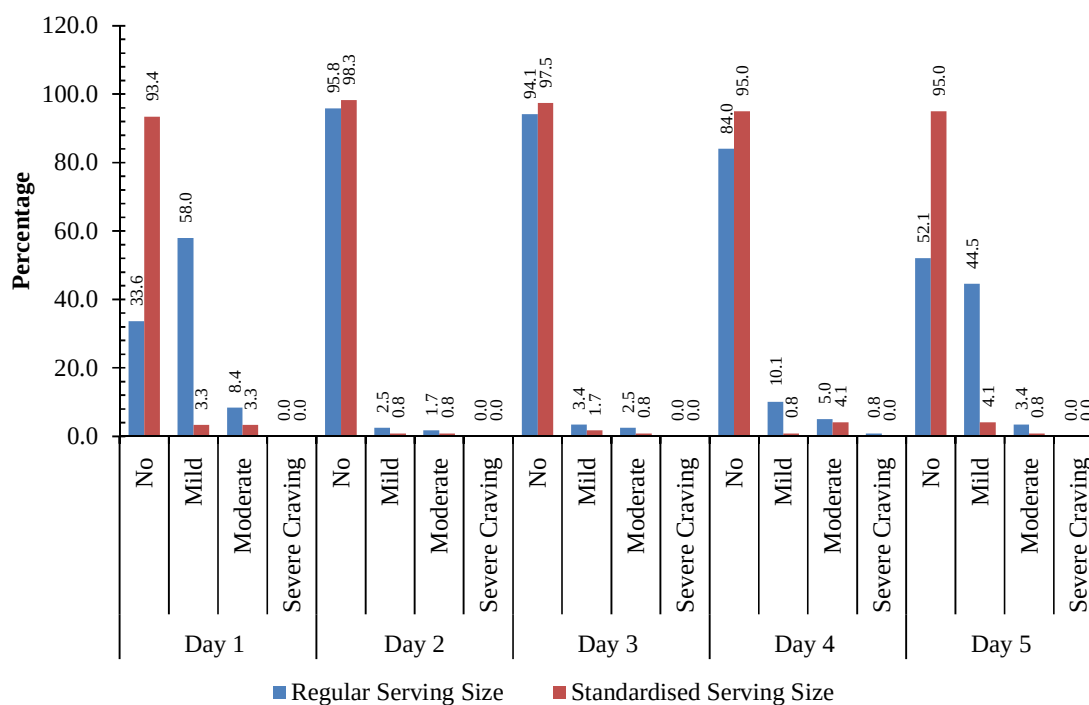
Table. No. 20. Head ache at Morning among among RSS and SSS groups according to Days

Morning Head Ache		Regular Serving Size		Standardised Serving Size	
		n	%	n	%
Day 1	No	40	33.6	112	93.4
	Mild	70	58.0	4	3.3
	Moderate	10	8.4	4	3.3
	Severe Craving	0	0.0	0	0.0
Day 2	No	115	95.8	118	98.3
	Mild	3	2.5	1	0.8
	Moderate	2	1.7	1	0.8
	Severe Craving	0	0.0	0	0.0
Day 3	No	113	94.1	117	97.5
	Mild	4	3.4	2	1.7
	Moderate	3	2.5	1	0.8
	Severe Craving	0	0.0	0	0.0
Day 4	No	101	84.0	114	95.0
	Mild	12	10.1	1	0.8
	Moderate	6	5.0	5	4.1
	Severe Craving	1	0.8	0	0.0

Day 5	No	63	52.1	114	95.0
	Mild	53	44.5	5	4.1
	Moderate	4	3.4	1	0.8
	Severe Craving	0	0.0	0	0.0

In Regular Serving group out of 120 subjects on Day 1 at morning hours 33.6% subjects were not having headache, 58% were having mild headache, 8.4% were having Moderate headache and No subjects were found for severe headache. On Day 2, 95.8% subjects were not having headache, 2.5% were having mild headache, 1.7% were having Moderate headache and No subjects were found for severe headache. On Day 3, 94.1% subjects were not having headache, 3.4% were having mild headache, 2.5% were having Moderate headache and No subjects were found for severe headache. On Day 4, 84% subjects were found headache, 10.1% mild headache, 5% Moderate headache and 0.8% severe headache. On Day 5, 52.1% subjects were found headache, 44.5% mild headache, 3.4% Moderate headache and 0% were having severe headache.

Graph no. 01. Head Ache at Morning time in Regular and Standard Samsarjana Krama groups



Where as in Standardized Serving group out of 120 subjects on, Day 1: 93.4% subjects were not having headache, 3.3% were having mild headache, 3.3% having Moderate headache and 0% were having severe headache. On Day 2: 98.3% subjects were not found headache, 0.8% mild headache, 0.8% Moderate headache and 0% were not having severe headache. on Day 3, 97.5% subjects were not having headache, 1.7% were having mild headache, 0.8% Moderate and 0% severe headache. On Day 4, 95% No subjects were found for headache, 0.8% mild headache, 4.1% Moderate headache and 0% severe headache. On Day 5, 95% subjects were found with no headache, 4.1% mild headache, 0.8% Moderate headache and 0% severe headache.

Table No. 21. Evening Head Ache among RSS and SSS groups according to Days

Evening Head Ache		Regular Serving Size		Standardised Serving Size	
		n	%	n	%
Day 1	No	102	84.9	114	95.0
	Mild	6	5.0	4	3.3
	Moderate	11	9.2	2	1.7
	Severe Craving	1	0.8	0	0.0
Day 2	No	114	95.0	116	96.7
	Mild	1	0.8	2	1.7
	Moderate	5	4.2	2	1.7
	Severe Craving	0	0.0	0	0.0
Day 3	No	105	87.4	116	96.7
	Mild	5	4.2	3	2.5
	Moderate	10	8.4	1	0.8
	Severe Craving	0	0.0	0	0.0
Day 4	No	114	95.0	118	98.3
	Mild	3	2.5	1	0.8
	Moderate	3	2.5	1	0.8
	Severe Craving	0	0.0	0	0.0
Day 5	No	100	83.2	116	96.7
	Mild	10	8.4	2	1.7
	Moderate	9	7.6	2	1.7
	Severe Craving	1	0.8	0	0.0

In Regular Serving group out of 120 subjects at evening on Day 1 84.9% subjects were not having headache, 5% were having mild headache, 9.2% were having Moderate headache and 0.8% severe headache. On Day 2, 95% subjects were not having headache, 0.8% were having mild headache, 4.2% were having Moderate headache and No subjects were found for severe headache. On Day 3, 87.4% subjects were not having headache, 4.2% were having mild headache, 8.4% were having Moderate headache and No subjects were found for severe headache. On Day 4, 95% subjects were found headache, 2.5% mild headache, 2.5% Moderate headache and severe headache 0%. On Day 5, 83.2% subjects were found headache, 8.4% mild headache, 7.6% Moderate headache and 0.8% severe headache.

Where as in Standardized Serving group out of 120 subjects on Day 1, 95% subjects were not having headache, 3.3% were having mild headache, 1.7% having Moderate headache and 0% were having severe headache. On Day 2, 96.7% No subjects were found headache, 1.7% mild headache, 1.7% Moderate headache and 0% severe headache. On Day 3, 96.7% subjects were not having headache, 2.5% were having mild headache, 0.8% Moderate and 0% severe headache. On Day 4, 98.3% No subjects were found for headache, 0.8% mild headache, 0.8% Moderate headache and 0% severe headache. On Day 5, 96.7% No subjects were found headache, 1.7% mild headache, 1.7% Moderate headache and 0% severe headache.

Graph no. 02. Head Ache at evening time in Regular and Standard Samsarjana Krama groups

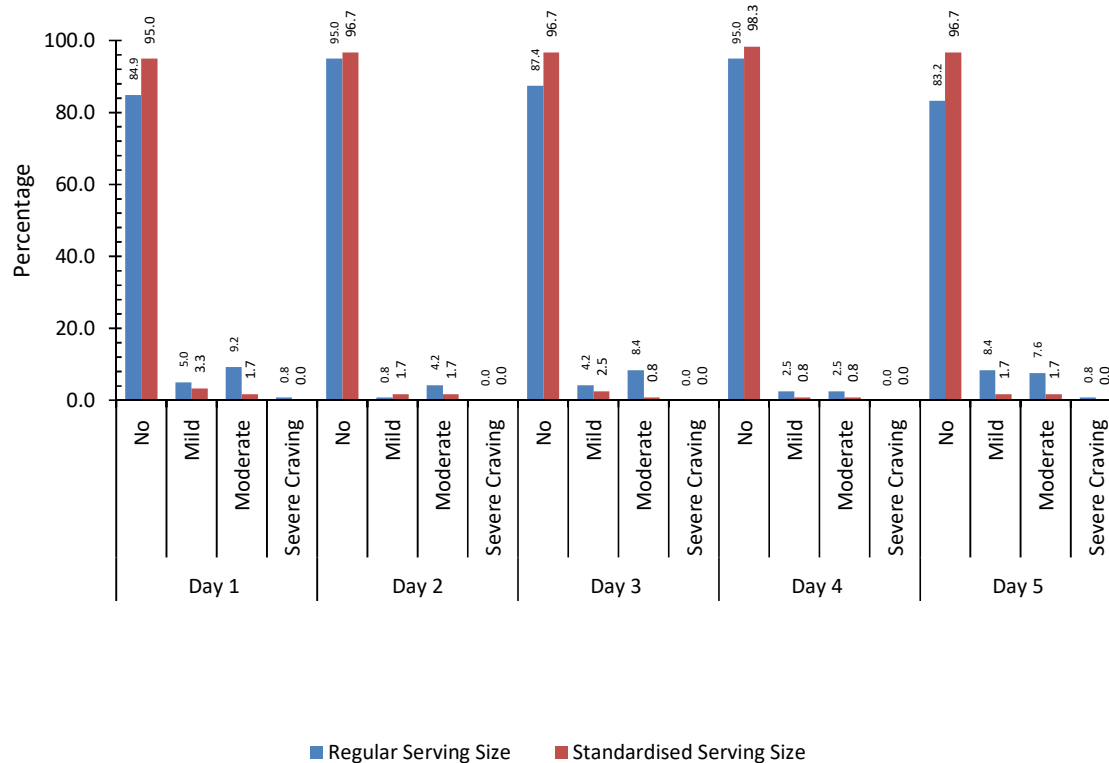


**Table No.22. Morning and Evening Head Ache among RSS and SSS groups
according to Days**

Headache		Morning		p value	Evening		p value
		RSS n (%)	SSS n (%)		RSS n (%)	SSS n (%)	
Day 1	No	40 (33.6)	112 (93.4)	-	102 (84.9)	114 (95)	0.040*
	Mild	70 (58)	4 (3.3)		6 (5)	4 (3.3)	
	Moderate	10 (8.4)	4 (3.3)		11 (9.2)	2 (1.7)	
	Severe	0 (0)	0 (0)		1 (0.8)	0 (0)	
Day 2	No	115 (95.8)	118 (98.3)	-	114 (95)	116 (96.7)	-
	Mild	3 (2.5)	1 (0.8)		1 (0.8)	2 (1.7)	
	Moderate	2 (1.7)	1 (0.8)		5 (4.2)	2 (1.7)	
	Severe	0 (0)	0 (0)		0 (0)	0 (0)	
Day 3	No	113 (94.1)	117 (97.5)	-	105 (87.4)	116 (96.7)	-
	Mild	4 (3.4)	2 (1.7)		5 (4.2)	3 (2.5)	
	Moderate	3 (2.5)	1 (0.8)		10 (8.4)	1 (0.8)	
	Severe	0 (0)	0 (0)		0 (0)	0 (0)	
Day 4	No	101 (84)	114 (95)	0.010*	114 (95)	118 (98.3)	-
	Mild	12 (10.1)	1 (0.8)		3 (2.5)	1 (0.8)	
	Moderate	6 (5)	5 (4.1)		3 (2.5)	1 (0.8)	
	Severe	1 (0.8)	0 (0)		0 (0)	0 (0)	
Day 5	No	63 (52.1)	114 (95)	-	100 (83.2)	116 (96.7)	0.007*
	Mild	53 (44.5)	5 (4.1)		10 (8.4)	2 (1.7)	
	Moderate	4 (3.4)	1 (0.8)		9 (7.6)	2 (1.7)	
	Severe	0 (0)	0 (0)		1 (0.8)	0 (0)	

On Day 1, in RSS group, morning, 58% and day 5, 44.5% experienced mild head ache whereas maximum 4.1% mild Headache in SSS Group on day 5. While in the evening time, in RSS group, 9.2% reported an moderate headache. In SSS group on day 1, maximum of 3.3% had head ache in the evening.

Graph No. 03. Showing Headache in the morning and evening in RSS and SSS groups

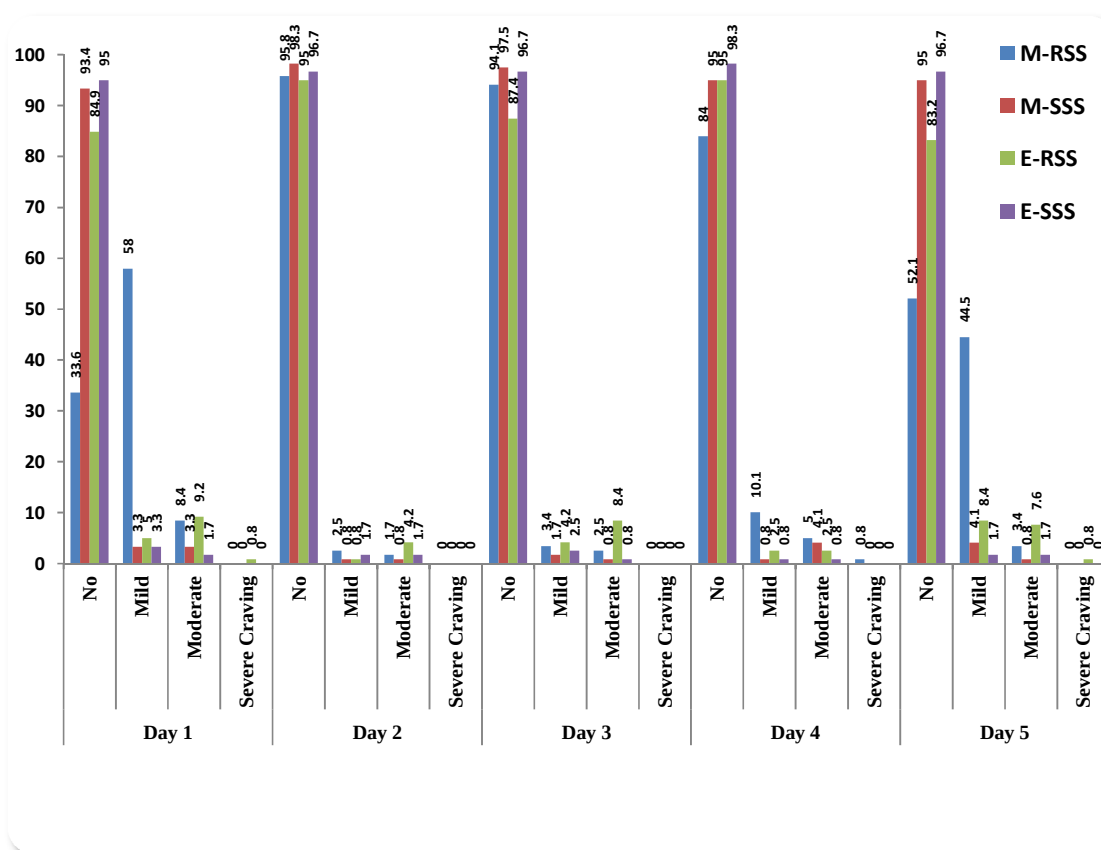


Table No.23. Morning Hunger among RSS and SSS Serving Size of Samsarjana

Krama according Days

Morning Hunger		Regular Serving Size		Standardised Serving Size	
		n	%	N	%
Day 1	No	102	84.9	105	87.6
	Mild	8	6.7	13	10.7
	Moderate	4	3.4	2	1.7
	Severe Craving	6	5	0	0
Day 2	No	105	87.4	117	97.5
	Mild	9	7.6	3	2.5
	Moderate	4	3.4	0	0
	Severe Craving	2	1.7	0	0
Day 3	No	105	87.4	96	80.2
	Mild	3	2.5	11	9.1
	Moderate	8	6.7	13	10.7
	Severe Craving	4	3.4	0	0
Day 4	No	57	47.9	117	97.5
	Mild	8	6.7	3	2.5
	Moderate	2	1.7	0	0
	Severe Craving	53	43.7	0	0
Day 5	No	61	51.3	114	95
	Mild	4	3.4	5	4.1
	Moderate	0	0	1	0.8
	Severe Craving	55	45.4	0	0

In group Regular Serving at morning out of 120 subjects on Day 1, 84.9% subjects were not having craving for food, 6.7% found for mild craving, 3.4% were having Moderate craving and 5% were having severe craving for food. On Day 2, 87.4% subjects were not having craving for food, 7.6% were having mild craving, 3.4% were having Moderate craving and 1.7% were having severe craving for food. On Day 3, 87.4% No subjects were found for craving for food, 2.5% mild craving, 6.7% Moderate craving and 3.4% severe craving for food. On Day 4: 47.9% subjects were not having craving for food, 6.7% were having mild craving, 1.7% were having Moderate craving and 43.7% were having severe craving for food. On Day 5: 51.3% subjects were not having craving for food, 3.4% were having mild craving, no subjects were found for Moderate craving and 45.4% severe craving.

In group Standardised Serving at morning out of 120 subjects on Day 1, 87.6% subjects were not having craving for food, 10.7% found for mild craving, 1.7% were having Moderate craving and 0% were having severe craving for food. On Day 2, 97.5% subjects were not having craving for food, 2.5% were having mild craving, 0% were having Moderate craving and 0% were having severe craving for food. On Day 3, 80.2% No subjects were found for craving for food, 9.1% mild craving, 10.7% Moderate craving and 0% severe craving for food. On Day 4, 97.5% subjects were not having craving for food, 2.5% were having mild craving, 0% were having Moderate craving and 0% were having severe craving for food. On Day 5, 95% subjects were not having craving for food, 4.1% were having mild craving, 0.8% subjects were found for Moderate craving and 0% severe craving.

Graph no. 04. Hunger at Morning time in Regular and Standard Samsarjana Krama groups

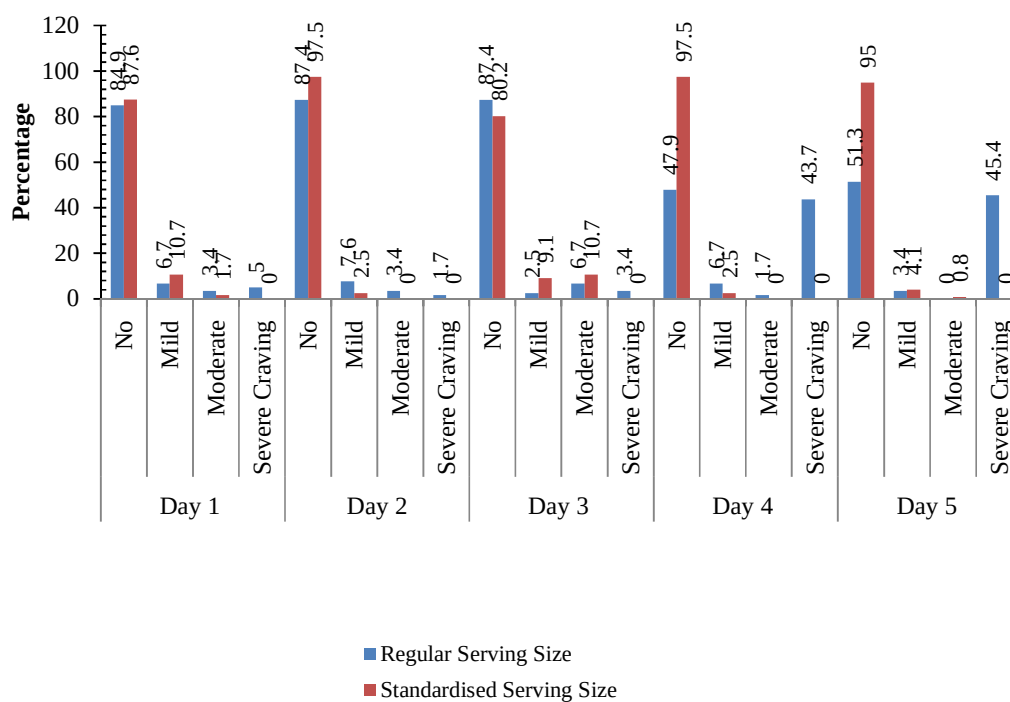


Table No. 24. Evening Hunger among among RSS and SSS groups according to Days

Evening hunger		Regular Serving Size		Standardised Serving Size	
		n	%	n	%
Day 1	No	43	36.1	102	85.1
	Mild	6	5.0	5	4.1
	Moderate	14	11.8	13	10.7
	Severe Craving	57	47.1	0	0.0
Day 2	No	104	87.4	119	99.2
	Mild	8	6.7	1	0.8
	Moderate	2	5.0	0	0.0
	Severe Craving	1	0.8	0	0.0
Day 3	No	97	81.5	114	95.0
	Mild	8	6.7	4	3.3
	Moderate	11	8.4	2	1.7
	Severe Craving	4	3.4	0	0.0
Day 4	No	103	86.6	108	90.1
	Mild	6	5.0	1	0.8
	Moderate	8	5.9	11	9.1
	Severe Craving	3	2.5	0	0.0
Day 5	No	105	87.4	106	88.4
	Mild	5	4.2	13	10.7
	Moderate	7	5.9	1	0.8
	Severe Craving	3	2.5	0	0.0

In group Regular Serving at evening out of 120 subjects on Day 1, 36.1% subjects were not having craving for food, 5.0% found for mild craving, 11.8% were having Moderate craving and 47.1% were having severe craving for food. On Day 2, 87.4% subjects were not having craving for food, 6.7% were having mild craving, 3.4% were having Moderate craving and 1.7% were having severe craving for food. On Day 3, 81.5% No subjects were found for craving for food, 6.7% mild craving, 8.4% Moderate craving and 3.4% severe craving for food. On Day 4, 86.6% subjects were not having craving for food, 5% were having mild craving, 5.9% were having Moderate craving and 2.5% were having severe craving for food. On Day 5, 87.4% subjects were not having craving for food, 4.2% were having mild craving, 5.9% subjects were found for Moderate craving and 2.5% severe craving. In group Standardised Serving at evening out of 120 subjects on Day 1, 85.1% subjects were not having craving for food, 4.1% found for mild craving, 10.7% were having Moderate craving and 0% were having severe craving for food. On Day 2, 99.2% subjects were not having craving for food, 0.8% were having mild craving, 0% were having Moderate craving and 0% were having severe craving for food. On Day 3, 95% No subjects were found for craving for food, 3.3 % mild craving, 1.7% Moderate craving and 0% severe craving for food. On Day 4, 90.1% subjects were not having craving for food, 0.8% were having mild craving, 9.1% were having Moderate craving and 0% were having severe craving for food. On Day 5, 88.4% subjects were not having craving for food, 10.7% were having mild craving, 0.8% subjects were found for Moderate craving and 0% severe craving.

Graph no. 05. Hunger at evening time in Regular and Standard Samsarjana Krama groups

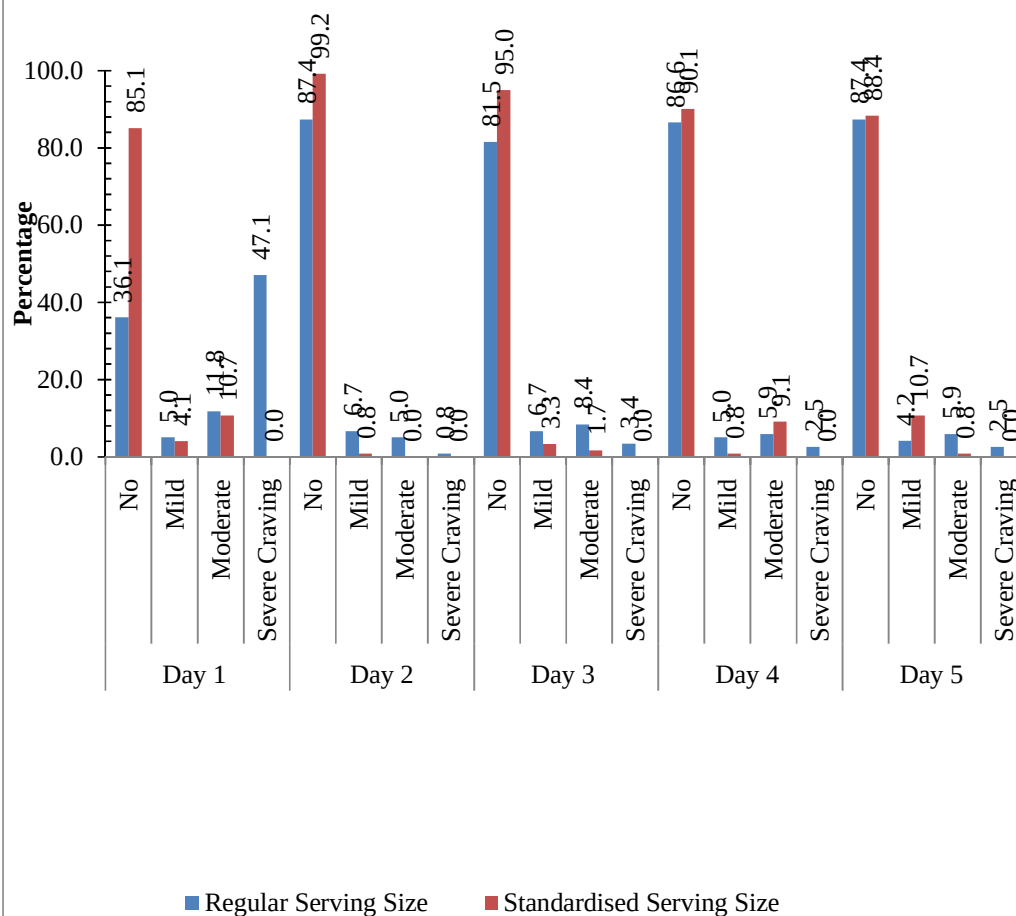


**Table. No. 25. Morning and Evening Hunger in the morning and evening in RSS
and SSS groups**

Hunger		Morning		p value	Evening		p value
		RSS n (%)	SSS n (%)		RSS n (%)	SSS n (%)	
Day 1	No	102 (84.9)	105 (87.6)	0.048*	43 (36.1)	102 (85.1)	0.001*
	Mild	8 (6.7)	13 (10.7)		6 (5)	5 (4.1)	
	Moderate	4 (3.4)	2 (1.7)		14 (11.8)	13 (10.7)	
	Severe	6 (5)	0 (0)		57 (47.1)	0 (0)	
Day 2	No	105 (87.4)	117 (97.5)	0.022*	104 (87.4)	119 (99.2)	0.025*
	Mild	9 (7.6)	3 (2.5)		8 (6.7)	1 (0.8)	
	Moderate	4 (3.4)	0 (0)		2 (5)	0 (0)	
	Severe	2 (1.7)	0 (0)		1 (0.8)	0 (0)	
Day 3	No	105 (87.4)	96 (80.2)	0.017*	97 (81.5)	114 (95)	0.005*
	Mild	3 (2.5)	11 (9.1)		8 (6.7)	4 (3.3)	
	Moderate	8 (6.7)	13 (10.7)		11 (8.4)	2 (1.7)	
	Severe	4 (3.4)	0 (0)		4 (3.4)	0 (0)	
Day 4	No	57 (47.9)	117 (97.5)	0.001*	103 (86.6)	108 (90.1)	0.067
	Mild	8 (6.7)	3 (2.5)		6 (5)	1 (0.8)	
	Moderate	2 (1.7)	0 (0)		8 (5.9)	11 (9.1)	
	Severe	53 (43.7)	0 (0)		3 (2.5)	0 (0)	
Day 5	No	61 (51.3)	114 (95)	0.001*	105 (87.4)	106 (88.4)	0.011*
	Mild	4 (3.4)	5 (4.1)		5 (4.2)	13 (10.7)	
	Moderate	0 (0)	1 (0.8)		7 (5.9)	1 (0.8)	
	Severe	55 (45.4)	0 (0)		3 (2.5)	0 (0)	

In RSS group at morning, on 4 and 5 had 43.7% and 45.4% with severe Hunger and on day one in the evening 47.1% Showed severe hunger/cravings. Whereas over 90% of the SSS group had no complaints. Hunger is maintained

Graph No. 06. Showing Hunger in the morning and evening in RSS and SSS groups

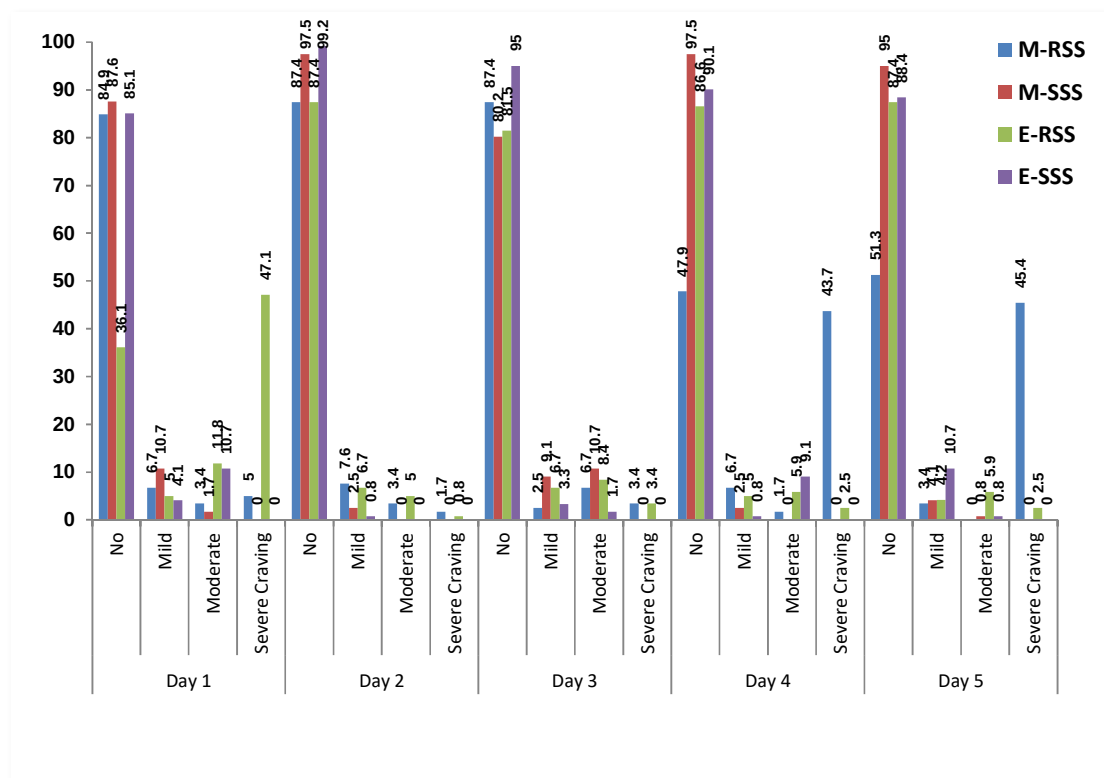


Table No. 26. Morning Flatulence among RSS and SSS groups according to Days

Morning Flatulence		Regular Serving Size		Standardised Serving Size	
		n	%	n	%
Day 1	No	112	93.3	112	93.4
	Mild	6	5	5	4.1
	Moderate	2	1.7	2	1.7
	Severe	0	0	1	0.8
Day 2	No	116	96.6	115	95.9
	Mild	3	2.5	5	4.1
	Moderate	1	0.8	0	0
	Severe	0	0	0	0
Day 3	No	116	96.6	112	93.4
	Mild	3	2.5	6	5
	Moderate	1	0.8	2	1.7
	Severe	0	0	0	0
Day 4	No	115	95.8	112	93.4
	Mild	2	1.7	5	4.1
	Moderate	3	2.5	3	2.5
	Severe	0	0	0	0
Day 5	No	115	95.8	114	95
	Mild	3	2.5	5	4.1
	Moderate	1	0.8	1	0.8
	Severe	1	0.8	0	0

In group Regular Serving at morning out of 120 subjects on Day 1, 93.3% no Subjects were found for flatulence, 5% mild flatulence, 1.7% Moderate flatulence and 0% severe flatulence. On Day 2, 96.6% subjects were not having flatulence, 2.5% were having mild flatulence, 0.8% were having Moderate flatulence and 0% were having severe flatulence. On Day 3, 96.6% subjects were not having flatulence, 2.5% were having mild flatulence, 0.8% were having Moderate flatulence and no Subjects were found for severe flatulence. On Day 4, 95.8% subjects were not having flatulence, 1.7% were having mild flatulence, 2.5% were having Moderate flatulence and no Subjects were found for severe flatulence. On Day 5, 95.8% subjects were not having flatulence, 2.5% were having mild flatulence, 0.8% were having Moderate flatulence and 0.8% Subjects were found for severe flatulence.

In group Standardised Serving at morning out of 120 subjects on Day 1, 93.4% Subjects were found for no flatulence, 4.1% mild flatulence, 1.7% Moderate flatulence and 0.8% severe flatulence. On Day 2, 95.9% subjects were not having flatulence, 4.1% were having mild flatulence, no Subjects were found for moderate and severe flatulence. On Day 3, 93.4% subjects were not having flatulence, 5% were having mild flatulence, 1.7% Subjects were found for Moderate and 0% severe flatulence. On Day 4, 93.4% subjects were not having flatulence, 4.1% were having mild flatulence, 2.5% Subjects were found for Moderate and 0% severe flatulence. On Day 5, 95% subjects were not having flatulence, 4.1% were having mild flatulence, 0.8% Subjects were found for Moderate and 0% severe flatulence.

Graph No. 07. Flatulence at Morning time in Regular and Standard Samsarjana Krama groups

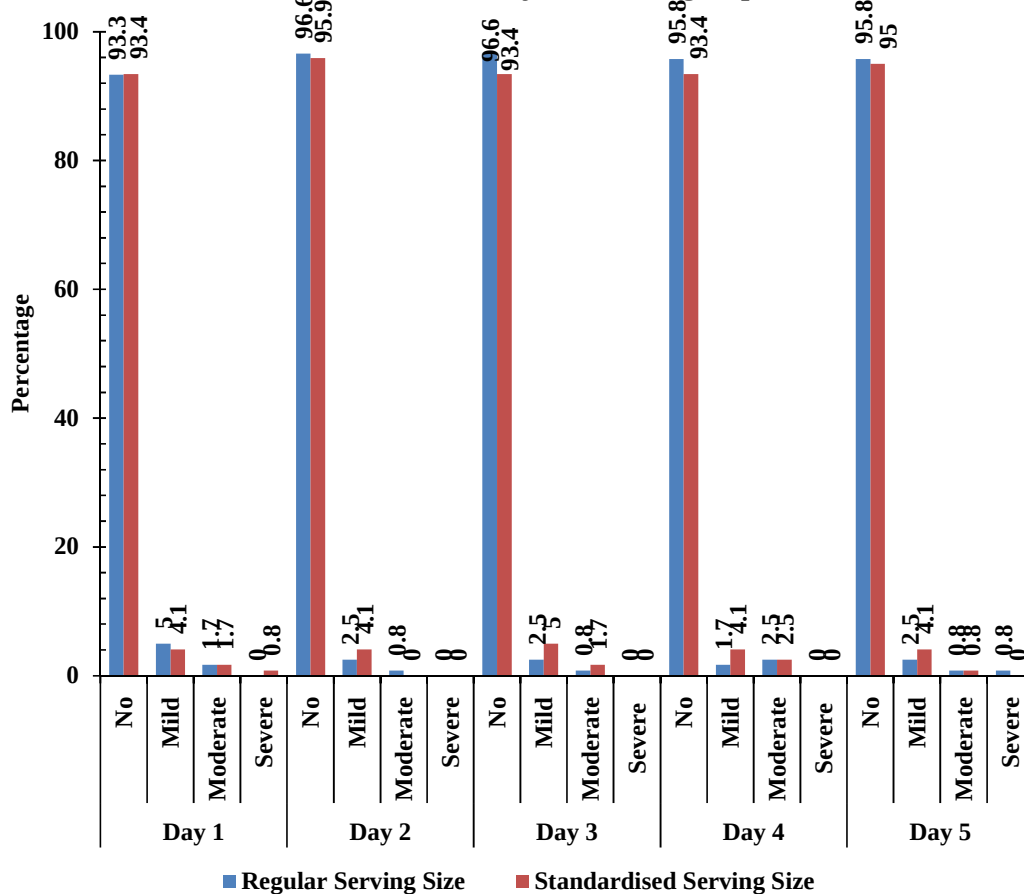


Table No. 27. Evening Flatulence among among RSS and SSS groups according to Days

Evening Flatulence		Regular Serving Size		Standardised Serving Size	
		n	%	n	%
Day 1	No	109	90.8	106	88.4
	Mild	6	5	9	7.4
	Moderate	5	4.2	4	3.3
	Severe	0	0	1	0.8
Day 2	No	111	93.3	113	94.2
	Mild	6	4.2	7	5.8
	Moderate	2	1.7	0	0
	Severe	1	0.8	0	0
Day 3	No	107	89.9	110	91.7
	Mild	9	6.7	8	6.6
	Moderate	4	3.4	1	0.8
	Severe	0	0	1	0.8
Day 4	No	112	94.1	111	92.6
	Mild	6	4.2	8	6.6
	Moderate	2	1.7	0	0
	Severe	0	0	1	0.8
Day 5	No	109	91.6	111	92.6
	Mild	7	5	7	5.8
	Moderate	3	2.5	1	0.8
	Severe	1	0.8	1	0.8

In group Regular Serving at evening out of 120 subjects on Day 1, 90.8% no Subjects were found for flatulence, 5% mild flatulence, 4.2% Moderate flatulence and 0% severe flatulence. On Day 2, 93.3% subjects were not having flatulence, 4.2% were having mild flatulence, 1.7% were having Moderate flatulence and 0.8% were having severe flatulence. On Day 3, 89.9% subjects were not having flatulence, 6.7% were having mild flatulence, 3.4% were having Moderate flatulence and no Subjects were found for severe flatulence. On Day 4, 94.1% subjects were not having flatulence, 4.2% were having mild flatulence, 1.7% were having Moderate flatulence and no Subjects were found for severe flatulence. On Day 5, 91.6% subjects were not having flatulence, 5% were having mild flatulence, 2.5% were having Moderate flatulence and 0.8% Subjects were found for severe flatulence.

In group Standardised Serving at evening out of 120 subjects on Day 1, 88.4% Subjects were found for no flatulence, 7.4% mild flatulence, 3.3% Moderate flatulence and 0.8% severe flatulence. On Day 2, 94.2% subjects were not having flatulence, 5.8% were having mild flatulence, no Subjects were found for moderate and severe flatulence. On Day 3, 91.7% subjects were not having flatulence, 6.6% were having mild flatulence, 0.8% Subjects were found for Moderate and 0.8% severe flatulence. On Day 4, 92.6% subjects were not having flatulence, 6.6% were having mild flatulence, 0% Subjects were found for Moderate and 0.8% severe flatulence. On Day 5, 92.6% subjects were not having flatulence, 5.8% were having mild flatulence, 0.8% Subjects were found for Moderate and 0.8% severe flatulence.

Graph No. 08. Flatulence at Evening time in Regular and Standard Samsarjana Krama groups

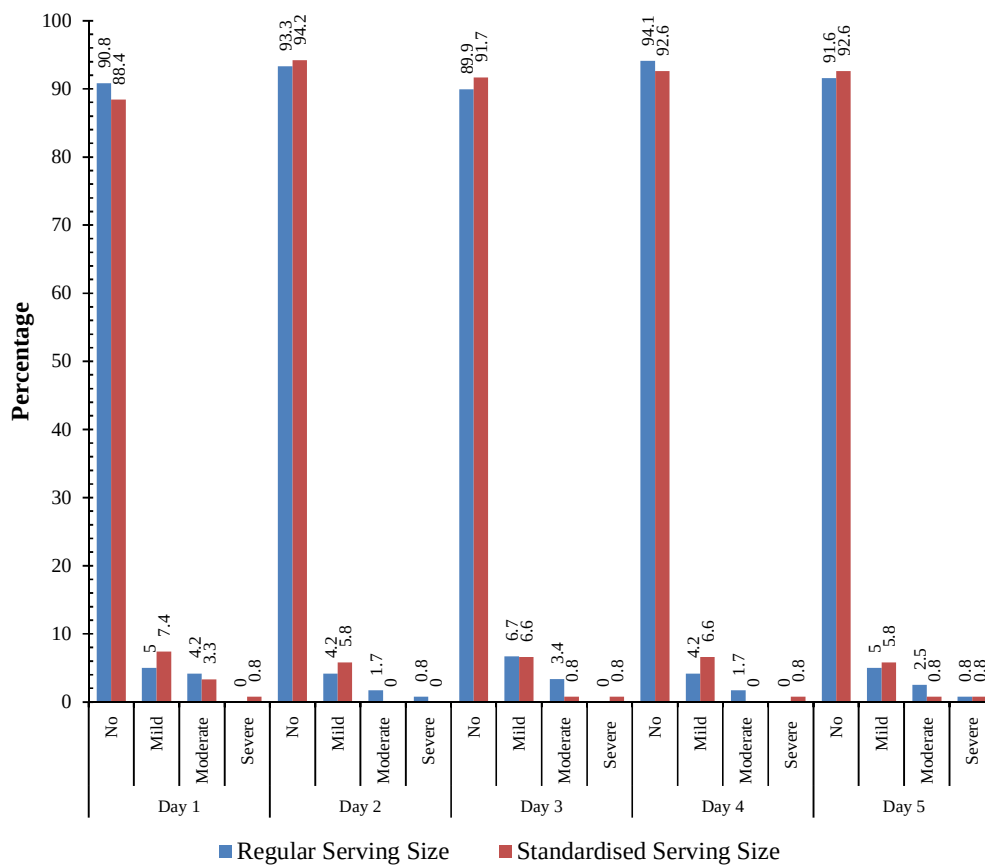


**Table No. 28. Flatulence in the morning and evening in RSS and SSS groups
according to Days**

Flatulence		Morning		p value	Evening		p value
		RSS n (%)	SSS n (%)		RSS n (%)	SSS n (%)	
Day 1	No	112 (93.3)	112 (93.4)	0.780	109 (90.8)	106 (88.4)	0.625
	Mild	6 (5)	5 (4.1)		6 (5)	9 (7.4)	
	Moderate	2 (1.7)	2 (1.7)		5 (4.2)	4 (3.3)	
	Severe Cr.	0 (0)	1 (0.8)		0 (0)	1 (0.8)	
Day 2	No	116 (96.6)	115 (95.9)	-	111 (93.3)	113 (94.2)	0.377
	Mild	3 (2.5)	5 (4.1)		6 (4.2)	7 (5.8)	
	Moderate	1 (0.8)	0 (0)		2 (1.7)	0 (0)	
	Severe Cr.	0 (0)	0 (0)		1 (0.8)	0 (0)	
Day 3	No	116 (96.6)	112 (93.4)	-	107 (89.9)	110 (91.7)	0.407
	Mild	3 (2.5)	6 (5)		9 (6.7)	8 (6.6)	
	Moderate	1 (0.8)	2 (1.7)		4 (3.4)	1 (0.8)	
	Severe Cr.	0 (0)	0 (0)		0 (0)	1 (0.8)	
Day 4	No	115 (95.8)	112 (93.4)	-	112 (94.1)	111 (92.6)	0.349
	Mild	2 (1.7)	5 (4.1)		6 (4.2)	8 (6.6)	
	Moderate	3 (2.5)	3 (2.5)		2 (1.7)	0 (0)	
	Severe Cr.	0 (0)	0 (0)		0 (0)	1 (0.8)	
Day 5	No	115 (95.8)	114 (95)	0.681	109 (91.6)	111 (92.6)	0.797
	Mild	3 (2.5)	5 (4.1)		7 (5)	7 (5.8)	
	Moderate	1 (0.8)	1 (0.8)		3 (2.5)	1 (0.8)	
	Severe Cr.	1 (0.8)	0 (0)		1 (0.8)	1 (0.8)	

In RSS group on all days in the morning and evening hours, 0.8 to 6.7% of subjects showed mild flatulence. In SSS group on day 1, in the evening 7.4% subjects showed the mild flatulence, this may be due to increased quantity of starch in rice.

Graph No. 09. Showing Flatulence in the morning and evening in RSS and SSS groups

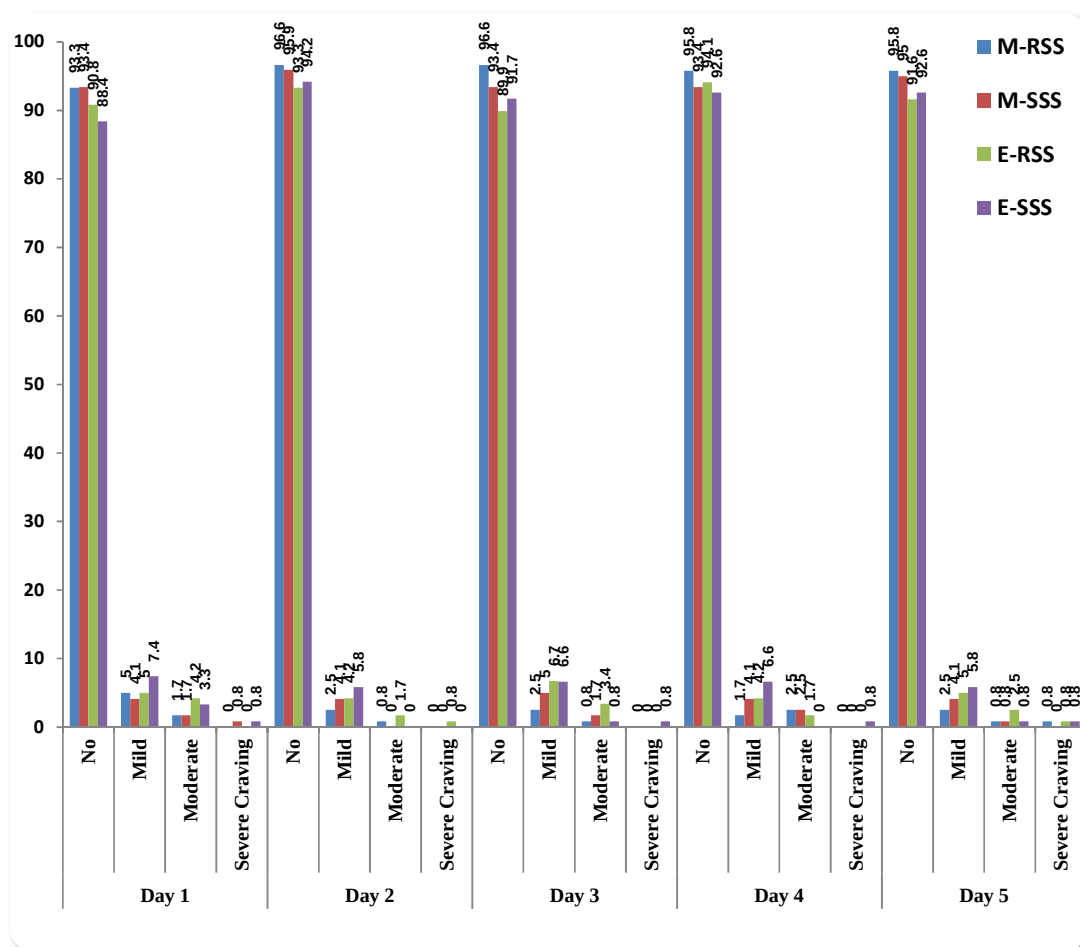


Table No. 29. Morning Giddiness among RSS and SSS groups according to Days

Morning Giddiness		Regular Serving Size of		Standardised Serving Size	
		n	%	n	%
Day 1	No	66	55.50	120	100
	Mild	54	44.50	0	0
	Moderate	0	0.00	0	0
	Severe	0	0.00	0	0
Day 2	No	117	97.50	120	100
	Mild	2	1.70	0	0
	Moderate	1	0.80	0	0
	Severe		0.00	0	0
Day 3	No	119	99.20	120	100
	Mild	1	0.80	0	0
	Moderate	0	0.00	0	0
	Severe	0	0.00	0	0
Day 4	No	116	96.60	120	100
	Mild	3	2.50	0	0
	Moderate	1	0.80	0	0
	Severe	0	0.00	0	0
Day 5	No	117	97.50	120	100
	Mild	2	1.70	0	0
	Moderate	1	0.80	0	0
	Severe	0	0.00	0	0

In group Regular Serving at morning out of 120 subjects on Day 1, 55.5% subjects were not having giddiness, 44.5% were having mild giddiness, no Subjects were found for Moderate and severe giddiness. On Day 2, 97.5% Subjects were found for No giddiness, 1.70% Mild, 0.8% Moderate and 0% severe giddiness. Day 3, 99.2% subjects were not having giddiness, 0.8% were having mild giddiness, no Subjects were found for Moderate and severe giddiness. Day 4, 96.6% subjects were not having giddiness, 2.5% were having mild giddiness, 0.8% Subjects were found for Moderate and 0% severe giddiness. Day 5, 97.5% subjects were not having giddiness, 1.7% were having mild giddiness, 0.8% Subjects were found for Moderate and no with severe giddiness.

In group Standardised Serving at morning out of 120 subjects from Day 1 to Day 5 no patient experienced any giddiness.

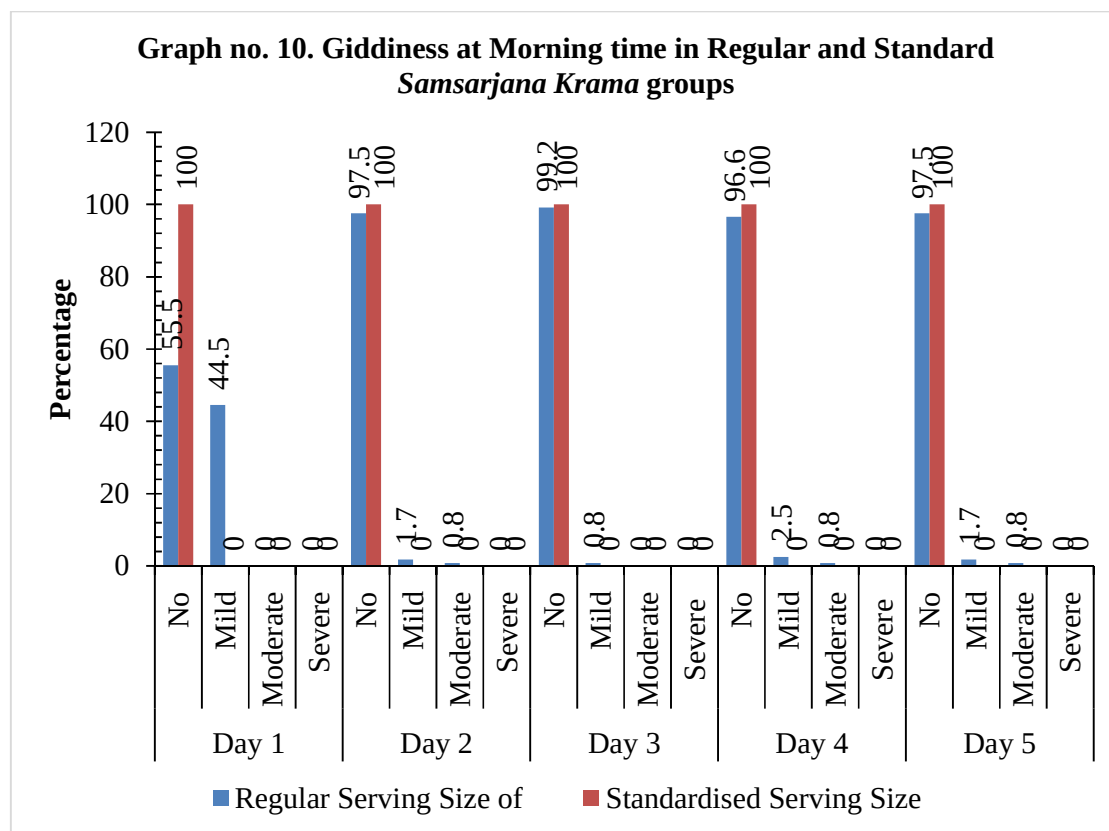


Table No. 30. Evening Giddiness among RSS and SSS groups according to Days

Evening Giddiness		Regular Serving Size		Standardised Serving Size	
		n	%	n	%
Day 1	No	113	95.00	120	100
	Mild	5	3.40	0	0
	Moderate	2	1.70	0	0
	Severe	0	0.00	0	0
Day 2	No	119	99.20	120	100
	Mild	1	0.80	0	0
	Moderate	0	0.00	0	0
	Severe	0	0.00	0	0
Day 3	No	65	54.60	120	100
	Mild	53	43.70	0	0
	Moderate	2	1.70	0	0
	Severe	0	0.00	0	0
Day 4	No	119	99.20	120	100
	Mild	1	0.80	0	0
	Moderate	0	0.00	0	0
	Severe	0	0.00	0	0
Day 5	No	66	55.5	120	100
	Mild	53	43.7	0	0
	Moderate	1	0.8	0	0
	Severe	0	0	0	0

In group Regular Serving at evening out of 120 subjects on Day 1, 95% subjects were not having giddiness, 3.4% were having mild giddiness, 1.7% Subjects were found for Moderate and 0% severe giddiness. On Day 2, 99.2% Subjects were found for No giddiness, 0.8% Mild & no subjects with Moderate and severe giddiness. Day 3, 54.6% subjects were not having giddiness, 43.7% were having mild giddiness, 1.7% Subjects were found for Moderate and % severe giddiness. Day 4, 99.2% subjects were not having giddiness, 0.8% were having mild giddiness, no Subjects were found for Moderate and severe giddiness. Day 5, 55.5% subjects were not having giddiness, 43.7% were having mild giddiness, 0.8% Subjects were found for Moderate and no with severe giddiness.

In group Standardised Serving at evening out of 120 subjects from Day 1 to Day 5 no patient experienced any giddiness.

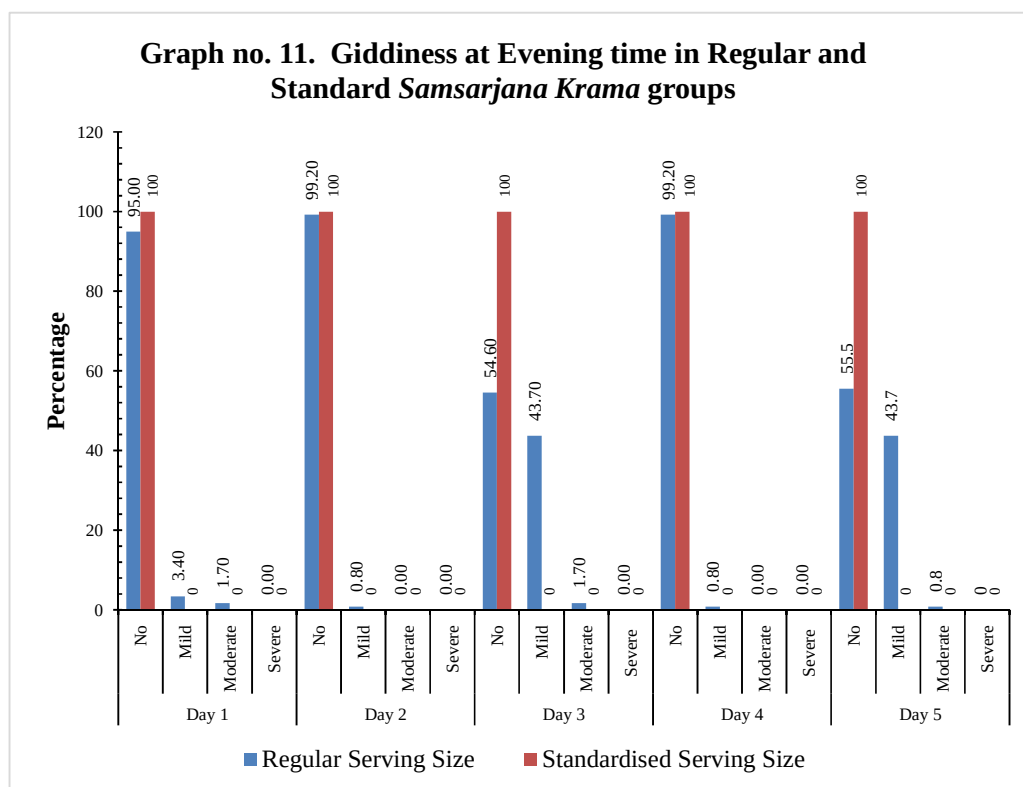


Table No. 31. Giddiness in the morning and evening in RSS and SSS groups according to Days

Giddiness		Morning		Evening	
		RSS n (%)	SSS n (%)	RSS n (%)	SSS n (%)
Day 1	No	66 (55.5)	120 (100)	113 (95)	120 (100)
	Mild	54 (44.5)	0 (0)	5 (3.4)	0 (0)
	Moderate	0 (0)	0 (0)	2 (1.7)	0 (0)
	Severe	0 (0)	0 (0)	0 (0)	0 (0)
Day 2	No	117 (97.5)	120 (100)	119 (99.2)	120 (100)
	Mild	2 (1.7)	0 (0)	1 (0.8)	0 (0)
	Moderate	1 (0.8)	0 (0)	0 (0)	0 (0)
	Severe	0	0 (0)	0 (0)	0 (0)
Day 3	No	119 (99.2)	120 (100)	65 (54.6)	120 (100)
	Mild	1 (0.8)	0 (0)	53 (43.7)	0 (0)
	Moderate	0 (0)	0 (0)	2 (1.7)	0 (0)
	Severe	0 (0)	0 (0)	0 (0)	0 (0)
Day 4	No	116 (96.6)	120 (100)	119 (99.2)	120 (100)
	Mild	3 (2.5)	0 (0)	1 (0.8)	0 (0)
	Moderate	1 (0.8)	0 (0)	0 (0)	0 (0)
	Severe	0 (0)	0 (0)	0 (0)	0 (0)
Day 5	No	117 (97.5)	120 (100)	66 (55.5)	120 (100)
	Mild	2 (1.7)	0 (0)	53 (43.7)	0 (0)
	Moderate	1 (0.8)	0 (0)	1 (0.8)	0 (0)
	Severe	0 (0)	0 (0)	0 (0)	0 (0)

Mild giddiness was reported by 44.5% in the RSS group at morning on day 1 and 43.7% in the evening on day 3 & 5.

Graph No. 12. Showing Giddiness in the morning and evening in RSS and SSS

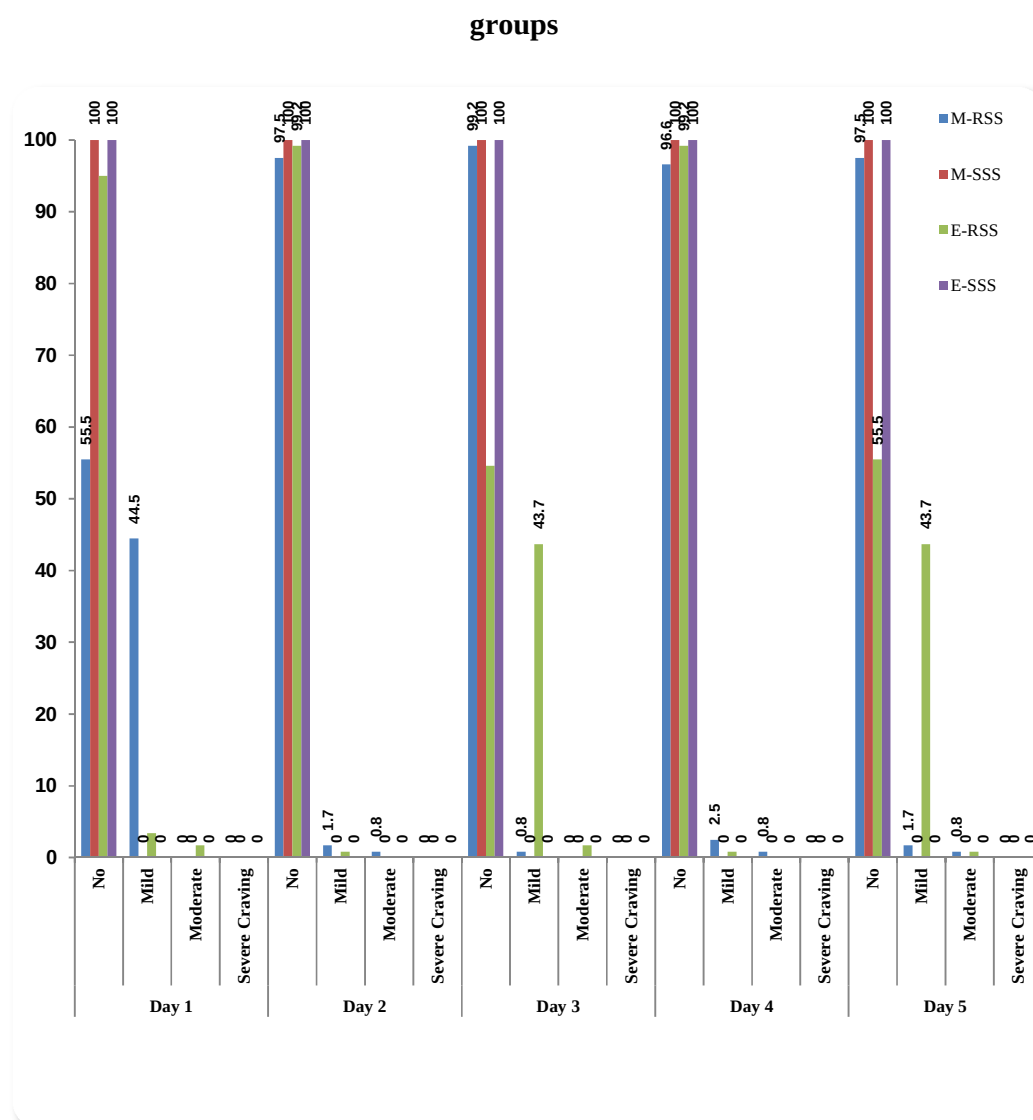


Table No. 32. Morning Vomiting among RSS and SSS groups according to Days

Morning Vomiting		Regular Serving Size		Standardised Serving Size	
		N	%	n	%
Day 1	No episodes of vomiting	119	99.20	120	100.00
	1-2 episodes in 24 hours	1	0.80	0	0.00
	3-5 episodes in 24 hours	0	0.00	0	0.00
	≥ 6 episodes in 24 hours	0	0.00	0	0.00
Day 2	No episodes of vomiting	120	100.00	120	100.00
	1-2 episodes in 24 hours	0	0.00	0	0.00
	3-5 episodes in 24 hours	0	0.00	0	0.00
	≥ 6 episodes in 24 hours	0	0.00	0	0.00
Day 3	No episodes of vomiting	119	99.20	120	100.00
	1-2 episodes in 24 hours	1	0.80	0	0.00
	3-5 episodes in 24 hours	0	0.00	0	0.00
	≥ 6 episodes in 24 hours	0	0.00	0	0.00
Day 4	No episodes of vomiting	119	99.20	121	100.00
	1-2 episodes in 24 hours	1	0.80	0	0.00
	3-5 episodes in 24 hours	0	0.00	0	0.00
	≥ 6 episodes in 24 hours	0	0.00	0	0.00
Day 5	No episodes of vomiting	68	57.10	120	100.00
	1-2 episodes in 24 hours	1	0.80	0	0.00
	3-5 episodes in 24 hours	51	42.00	0	0.00
	≥ 6 episodes in 24 hours	0	0.00	0	0.00

In group Regular Serving at morning out of 120 subjects on Day 1, 99.2% subjects were not having vomiting, 0.8% were having 1-2 episodes of vomiting in 24 hrs. and no Subjects were found for 3-5 and ≥ 6 episodes of vomiting in 24 hrs. On Day 2, 100% subjects were not having vomiting. On Day 3, 99.2% subjects were not having vomiting, 0.8% were having 1-2 episodes of vomiting in 24 hrs. and no Subjects were found for 3-5 and ≥ 6 episodes of vomiting in 24 hrs. On Day 4, 99.2% subjects were not having vomiting, 0.8% were having 1-2 episodes of vomiting in 24 hrs. and no Subjects were found for 3-5 and ≥ 6 episodes of vomiting in 24 hrs. On Day 5, 57.1% subjects were not having vomiting, 0.8% were having 1-2 episodes of vomiting in 24 hrs. and 42% Subjects were found for 3-5 episodes of vomiting and 0% subjects for more than 6 episodes of vomiting in 24 hrs Vomiting.

In group Standardised Serving at morning out of 120 subjects on Day 1, 2, 3, 4 and 5 no Subjects were found Vomiting.

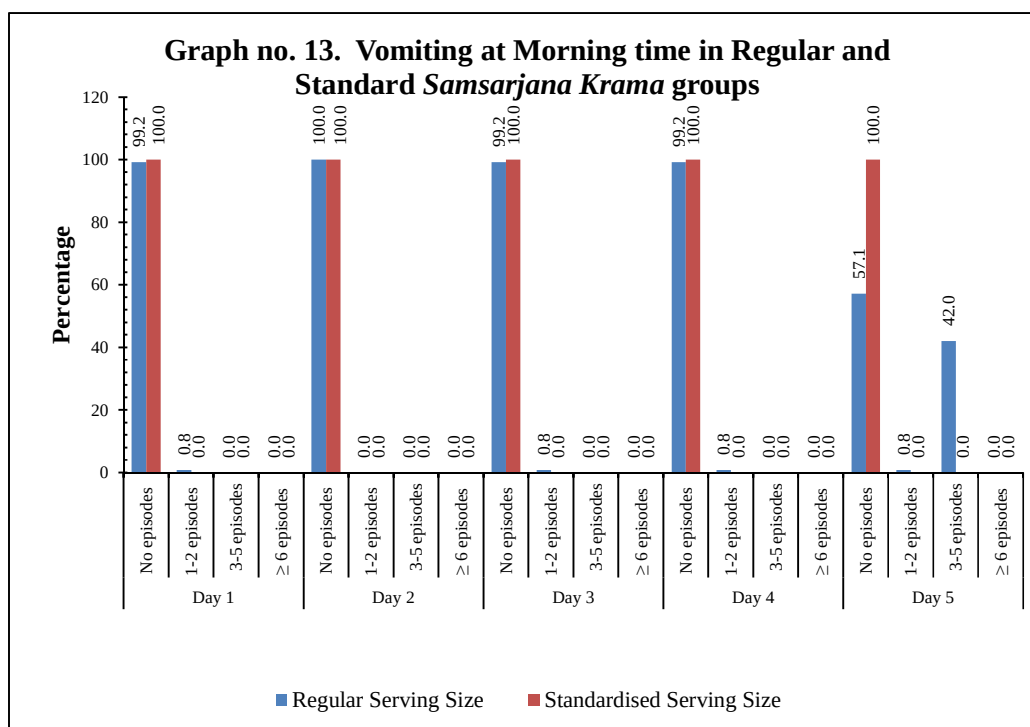


Table No. 33. Evening Vomiting among RSS and SSS groups according to Days

Evening Vomiting		Regular Serving Size		Standardised Serving Size	
		n	%	n	%
Day 1	No episodes of vomiting	65	54.60	119	99.20
	1-2 episodes in 24 hours	4	3.40	1	0.80
	3-5 episodes in 24 hours	51	42.00	0	0.00
	≥ 6 episodes in 24 hours	0	0.00	0	0.00
Day 2	No episodes of vomiting	120	100.00	120	100.00
	1-2 episodes in 24 hours	0	0.00	0	0.00
	3-5 episodes in 24 hours	0	0.00	0	0.00
	≥ 6 episodes in 24 hours	0	0.00	0	0.00
Day 3	No episodes of vomiting	119	99.20	119	99.20
	1-2 episodes in 24 hours	1	0.80	1	0.80
	3-5 episodes in 24 hours	0	0.00	0	0.00
	≥ 6 episodes in 24 hours	0	0.00	0	0.00
Day 4	No episodes of vomiting	119	99.20	120	100.00
	1-2 episodes in 24 hours	1	0.80	0	0.00
	3-5 episodes in 24 hours	0	0.00	0	0.00
	≥ 6 episodes in 24 hours	0	0.00	0	0.00
Day 5	No episodes of vomiting	117	97.50	119	99.20
	1-2 episodes in 24 hours	3	2.50	1	0.80
	3-5 episodes in 24 hours	0	0.00	0	0.00
	≥ 6 episodes in 24 hours	0	0.00	0	0.00

In group Regular Serving at evening out of 120 subjects on Day 1, 54.6% subjects were not having vomiting, 3.4% were having 1-2 episodes of vomiting in 24 hrs. and 42% Subjects were found for 3-5 episodes of vomiting in 24 hrs. and no subjects for more than 6 episodes of vomiting in 24 hrs Vomiting. On Day 2, 100% subjects were not having vomiting. On Day 3, 99.2% subjects were not having vomiting, 0.8% were having 1-2 episodes of vomiting in 24 hrs. and no Subjects were found for 3-5 & ≥ 6 episodes of vomiting in 24 hrs Vomiting. On Day 4, 99.2% subjects were not having vomiting, 0.8% were having 1-2 episodes of vomiting in 24 hrs. and no Subjects were found for 3-5 & ≥ 6 episodes of vomiting in 24 hrs Vomiting. On Day 5, 97.5% subjects were not having vomiting, 2.5% were having 1-2 episodes of vomiting in 24 hrs. and no Subjects were found for 3-5 and ≥ 6 episodes of vomiting in 24hrs Vomiting.

In group standardised Serving at evening out of 120 subjects on Day 1, 99.2% subjects were not having vomiting, 0.8% were having 1-2 episodes of vomiting in 24 hrs. and and no Subjects were found for 3-5 & ≥ 6 episodes of vomiting in 24 hrs Vomiting. On Day 2, 100% subjects were not having vomiting. On Day 3, 99.2% subjects were not having vomiting, 0.8% were having 1-2 episodes of vomiting in 24 hrs. and and no Subjects were found for 3-5 & ≥ 6 episodes of vomiting in 24 hrs Vomiting. On Day 4, 100% subjects were not having vomiting. On Day 5, 99.2% subjects were not having vomiting, 0.8% were having 1-2 episodes of vomiting in 24 hrs. and and no Subjects were found for 3-5 & ≥ 6 episodes of vomiting in 24 hrs Vomiting.

Graph no. 14. Vomiting at Evening time in Regular and Standard Samsarjana Krama groups

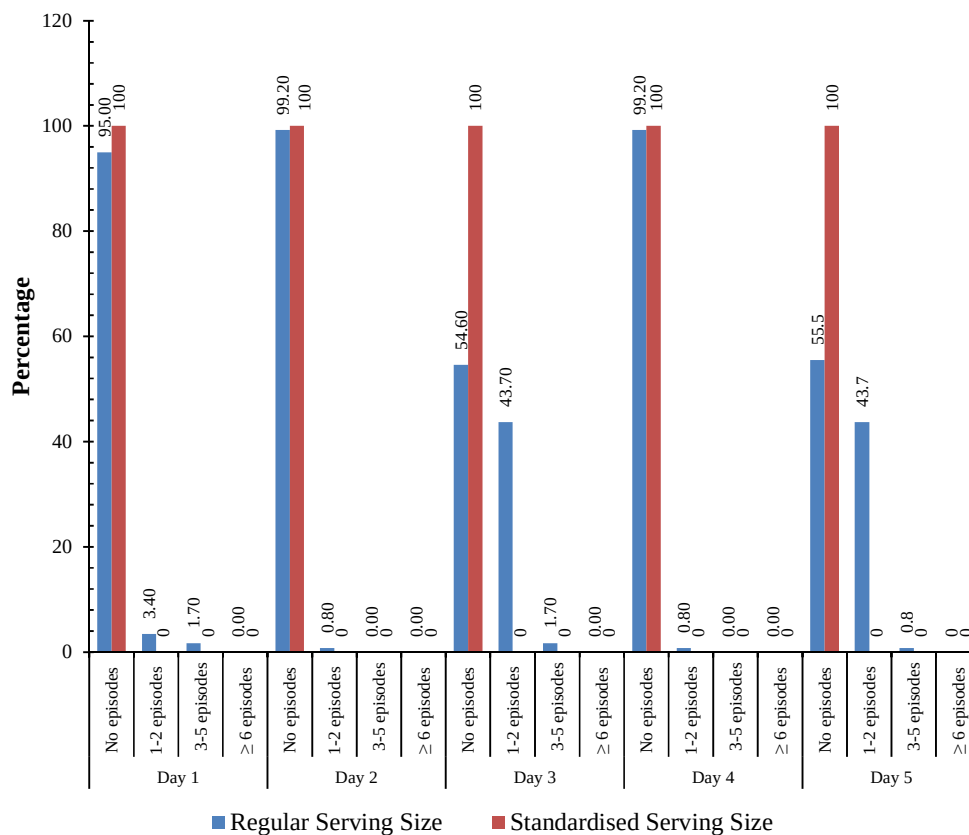


**Table No. 34 Vomiting in the morning and evening in RSS and SSS groups
according to Days**

Vomiting		Morning		Evening	
		RSS n (%)	SSS n (%)	RSS n (%)	SSS n (%)
Day 1	No	119 (99.20)	120 (100)	117 (97.50)	119 (99.20)
	1 - 2	1 (0.80)	0 (0)	3 (2.50)	1 (0.80)
	3 - 5	0 (0)	0 (0)	0 (0)	0 (0)
	> = 6	0 (0)	0 (0)	0 (0)	0 (0)
Day 2	No	120 (100)	120 (100)	120 (100)	120 (100)
	1 - 2	0 (0)	0 (0)	0 (0)	0 (0)
	3 - 5	0 (0)	0 (0)	0 (0)	0 (0)
	> = 6	0 (0)	0 (0)	0 (0)	0 (0)
Day 3	No	119 (99.20)	120 (100)	119 (99.20)	119 (99.20)
	1 - 2	1 (0.80)	0 (0)	1 (0.80)	1 (0.80)
	3 - 5	0 (0)	0 (0)	0 (0)	0 (0)
	> = 6	0 (0)	0 (0)	0 (0)	0 (0)
Day 4	No	119 (99.20)	120 (100)	119 (99.20)	119 (99.20)
	1 - 2	1 (0.80)	0 (0)	1 (0.80)	0 (0.80)
	3 - 5	0 (0)	0 (0)	0 (0)	0 (0)
	> = 6	0 (0)	0 (0)	0 (0)	0 (0)
Day 5	No	117 (97.50)	120 (100)	117 (97.50)	120 (100.0)
	1 - 2	3 (2.50)	0 (0)	3 (2.50)	1 (0.8)
	3 - 5	0 (0)	0 (0)	0 (0)	0 (0)
	> = 6	0 (0)	0 (0)	0 (0)	0 (0)

On all days and in both groups more than 97.5% of subjects not having vomiting.

Graph No. 15. Showing Vomiting in the morning and evening in RSS and SSS

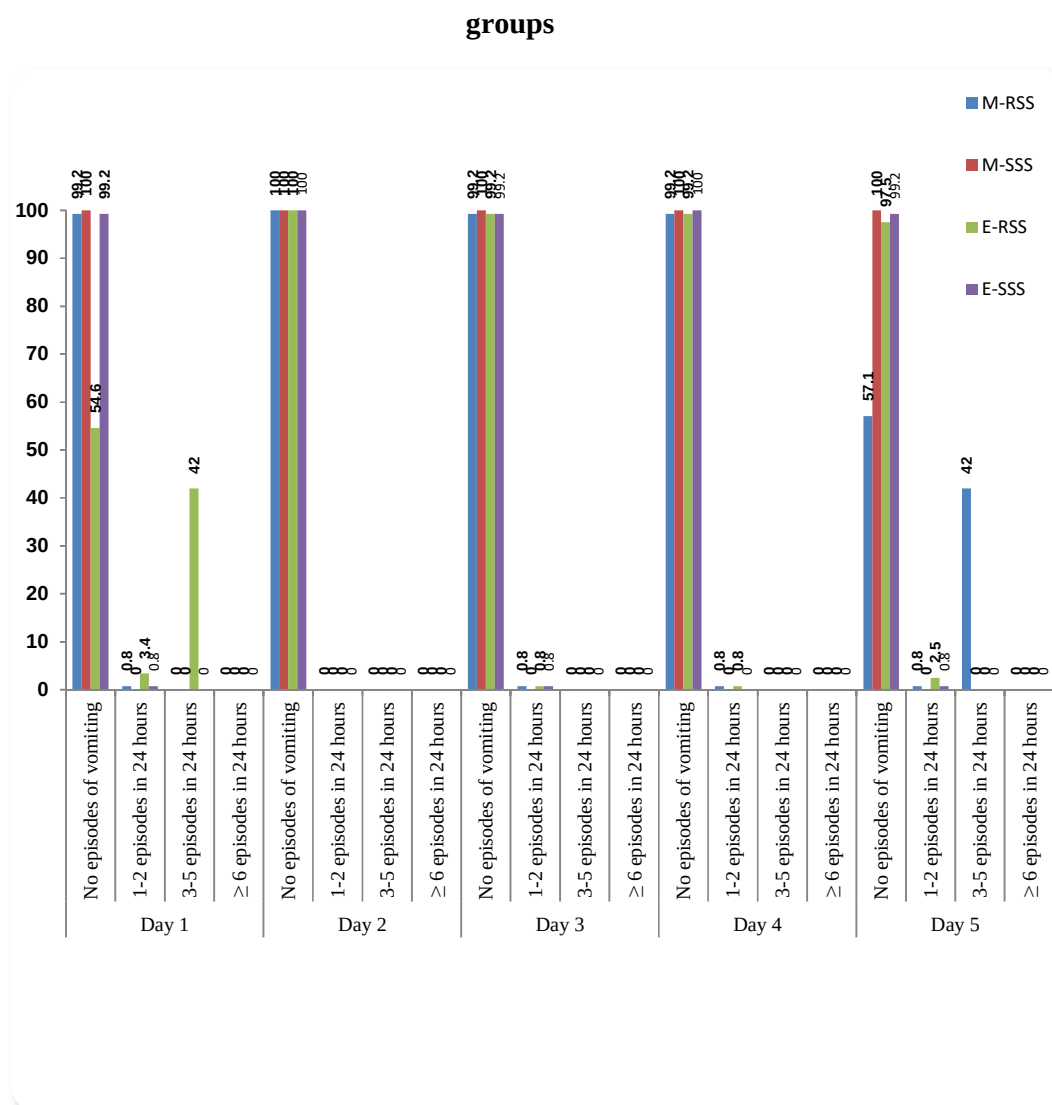


Table No.35. Morning Distaste among RSS and SSS groups according to Days

Morning Distaste		Regular Serving Size of		Standardised Serving Size	
		n	%	n	%
Day 1	No	106	89.1	97	80.2
	Mild	2	1.7	2	1.7
	Moderate	8	6.7	22	18.2
	Severe	3	2.5	0	0
Day 2	No	62	52.1	111	91.7
	Mild	52	43.7	9	7.4
	Moderate	5	4.2	1	0.8
	Severe	0	0	0	0
Day 3	No	112	94.1	116	95.9
	Mild	5	4.2	3	2.5
	Moderate	2	1.7	2	1.7
	Severe	0	0	0	0
Day 4	No	108	90.8	111	91.7
	Mild	1	0.8	6	5
	Moderate	8	6.7	4	3.3
	Severe	2	1.7	0	0
Day 5	No	113	95	113	93.4
	Mild	3	2.5	6	5
	Moderate	2	1.7	2	1.7
	Severe	1	0.8	0	0

In group Regular Serving at morning out of 120 subjects on Day 1, 89.1% Subjects were found for No Distaste, 1.7% Mild, 6.7% Moderate and 2.5% severe Distaste. on Day 2, 52.1% subjects were not having distaste, 43.7% were having mild distaste, 4.2% Subjects were found for Moderate and 0% severe Distaste. On Day 3, 94.1% subjects were not having distaste, 4.2% were having mild distaste, 1.7% Subjects were found for Moderate and 0% severe Distaste. On Day 4, 90.8% subjects were not having distaste, 0.8% were having mild distaste, 6.7% Subjects were found for Moderate and 1.7% severe Distaste. On Day 5, 95% subjects were not having distaste, 2.5% were having mild distaste, 1.7% Subjects were found for Moderate and 0.8% severe Distaste.

In group Standardised Serving at morning out of 120 subjects on Day 1, 80.2% Subjects were found for No Distaste, 1.7% Mild, 18.2% Moderate and 0% severe Distaste. On Day 2, 91.7% subjects were not having distaste, 7.4% were having mild distaste, 0.8% Subjects were found for Moderate and 0% severe Distaste. On Day 3, 95.9% subjects were not having distaste, 2.5% were having mild distaste, 1.7% Subjects were found for Moderate and 0% severe Distaste. On Day 4, 91.7% subjects were not having distaste, 5% were having mild distaste, 3.3% Subjects were found for Moderate and 0% severe Distaste. On Day 5, 93.4% subjects were not having distaste, 5% were having mild distaste, 1.7% Subjects were found for Moderate and 0% severe Distaste.

Graph no. 16. Distaste at Morning time in Regular and Standard Samsarjana Krama groups

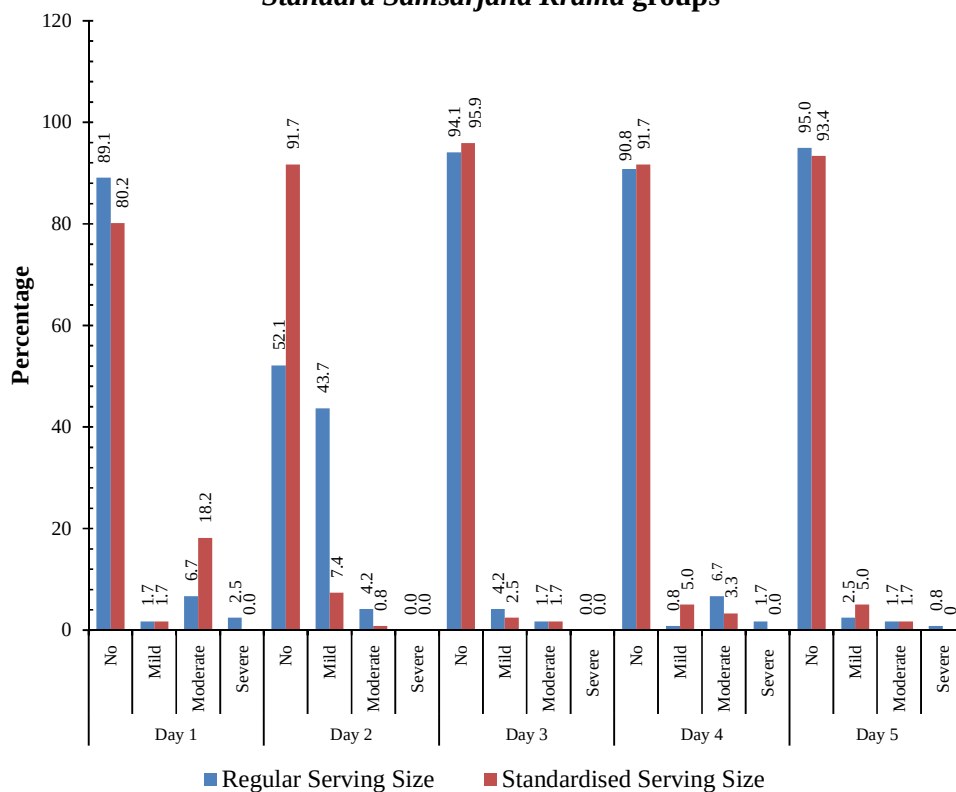


Table No.36 Evening Distaste among RSS and SSS groups according to Days

Evening Distaste		Regular Serving Size of		Standardised Serving Size	
		n	%	n	%
Day 1	No	100	83.2	104	86.66
	Mild	5	4.2	11	9.16
	Moderate	13	10.9	5	4.16
	Severe	2	1.7	0	1.7
Day 2	No	113	94.1	115	94.1
	Mild	1	0.8	4	4.2
	Moderate	5	4.2	1	0.8
	Severe	1	0.8	0	0.0
Day 3	No	100	83.2	89	83.2
	Mild	5	4.2	8	4.2
	Moderate	12	10.1	23	10.1
	Severe	3	2.5	0	2.5
Day 4	No	109	90.8	112	90.8
	Mild	4	3.4	7	3.4
	Moderate	7	5.9	1	5.9
	Severe	0	0	0	0
Day 5	No	56	46.2	94	46.2
	Mild	53	44.5	5	44.5
	Moderate	11	9.2	21	9.2
	Severe	0	0	0	0

In group Regular Serving at evening out of 120 subjects on Day 1, 83.2% Subjects were found for No Distaste, 4.2% Mild, 10.9% Moderate and 1.7% severe Distaste. On Day 2, 94.1% subjects were not having distaste, 0.8% were having mild distaste, 4.2% Subjects were found for Moderate and 0.8% severe Distaste. On Day 3, 83.2% subjects were not having distaste, 4.2% were having mild distaste, 10.1% Subjects were found for Moderate and 2.5% severe Distaste. On Day 4, 90.8% subjects were not having distaste, 3.4% were having mild distaste, 5.9% Subjects were found for Moderate and 0% severe Distaste. On Day 5, 46.2% subjects were not having distaste, 44.5% were having mild distaste, 9.2% Subjects were found for Moderate and 0%severe Distaste.

In group Standardised Serving at evening out of 120 subjects on Day 1, 83.2% Subjects were found for No Distaste, 4.2% Mild, 10.9% Moderate and 1.7% severe Distaste. On Day 2, 94.1% subjects were not having distaste, 0.8% were having mild distaste, 4.2% Subjects were found for Moderate and 0.8% severe Distaste. On Day 3, 83.2%% subjects were not having distaste, 4.2% were having mild distaste, 10.1% Subjects were found for Moderate and 2.5% severe Distaste. On Day 4, 90.8% subjects were not having distaste, 3.4% were having mild distaste, 5.9% Subjects were found for Moderate and 0% severe Distaste. On Day 5, 46.2% subjects were not having distaste, 44.5% were having mild distaste, 9.2% Subjects were found for Moderate and 0% severe Distaste.

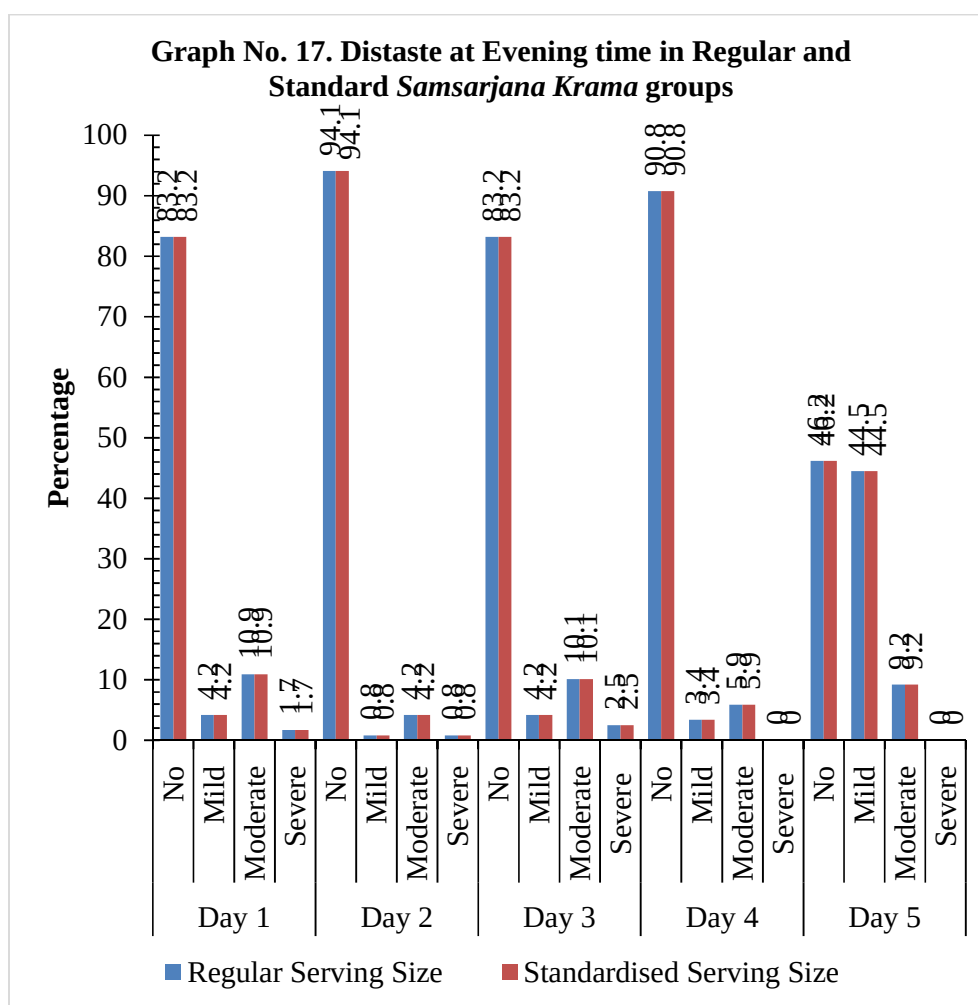


Table No. 37. Distaste in the morning and evening in RSS and SSS groups according to Days

Distaste		Morning		p value	Evening		p value
		RSS n (%)	SSS n (%)		RSS n (%)	SSS n (%)	
Day 1	No	106 (89.1)	97 (80.2)	0.019*	100 (83.2)	104 (86.66)	0.048*
	Mild	2 (1.7)	2 (1.7)		5 (4.2)	11 (9.16)	
	Moderate	8 (6.7)	22 (18.2)		13 (10.9)	5 (1.7)	
	Severe	3 (2.5)	0 (0)		2 (1.7)	0 (0)	
Day 2	No	62 (52.1)	111 (91.7)	-	113 (94.1)	115 (94.1)	0.140
	Mild	52 (43.7)	9 (7.4)		1 (0.8)	4 (4.8)	
	Moderate	5 (4.2)	1 (0.8)		5 (4.2)	1 (0.8)	
	Severe	0 (0)	0 (0)		1 (0.8)	0 (0)	
Day 3	No	112 (94.1)	116 (95.9)	-	100 (83.2)	89 (83.2)	0.050*
	Mild	5 (4.2)	3 (2.5)		5 (4.2)	8 (4.2)	
	Moderate	2 (1.7)	2 (1.7)		12 (10.1)	23 (10.1)	
	Severe	0 (0)	0 (0)		3 (2.5)	0 (0)	
Day 4	No	108 (90.8)	111 (91.7)	0.074	109 (90.8)	112 (90.8)	-
	Mild	1 (0.8)	6 (5)		4 (3.4)	7 (3.4)	
	Moderate	8 (6.7)	4 (3.3)		7 (5.9)	1 (5.9)	
	Severe	2 (1.7)	0 (0)		0 (0)	0 (0)	
Day 5	No	113 (95)	113 (93.4)	0.576	56 (46.2)	94 (78.0)	-
	Mild	3 (2.5)	6 (5)		53 (44.5)	5 (4.5)	
	Moderate	2 (1.7)	2 (1.7)		11 (9.2)	21 (17.5)	
	Severe	1 (0.8)	0 (0)		0 (0)	0 (0)	

In group 1, On day two in the morning 43.7% mild and 18.2% showed moderate distaste in SSS group. Whereas in the evening in RSS group 44.5% with mild and 9.2% moderate distaste on day 5 & in SSS group 9.16% mild and 17.5% moderate

Graph No. 18. Showing Distaste in the morning and evening in RSS and SSS

groups

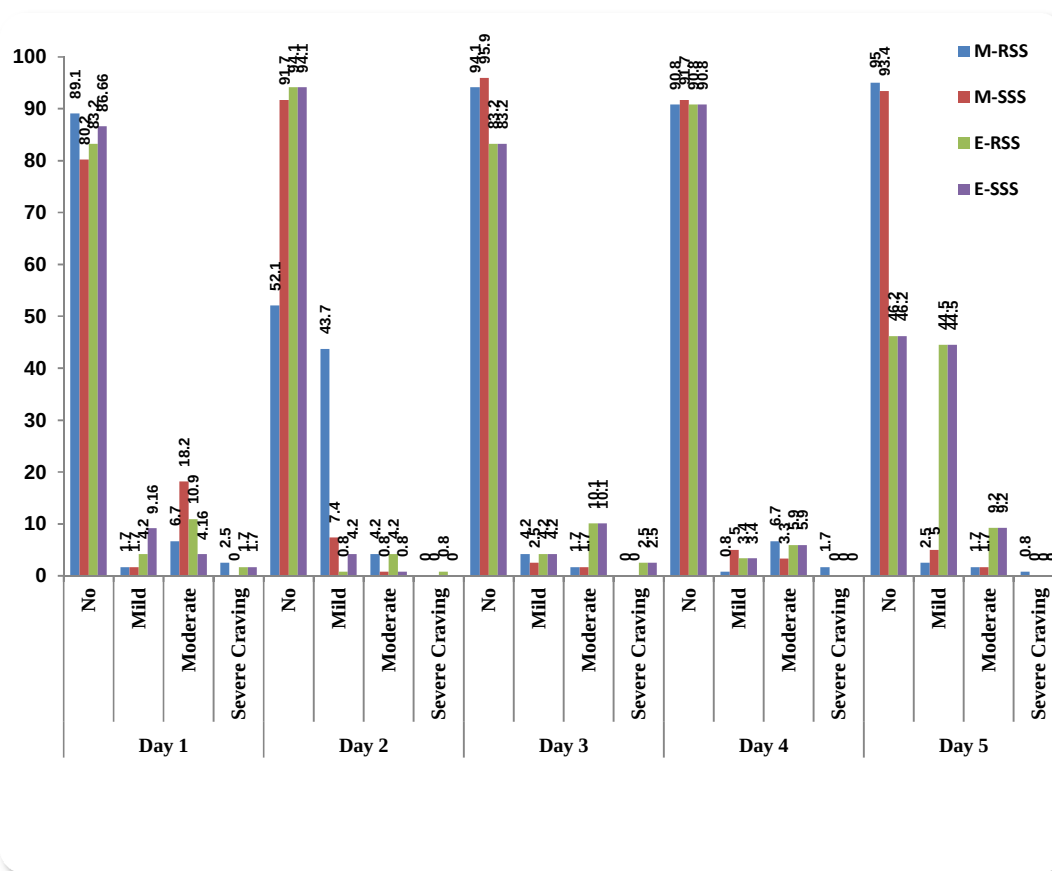


Table No. 38. Morning Lethargy among RSS and SSS Groups according to Days

Morning Lethargy		Regular Serving Size		Standardised Serving Size	
		n	%	n	%
Day 1	(A) No Lethargy	59	49.6	110	91.7
	(B) Lethargy relieved by rest	6	5.0	8	6.6
	(C) Lethargy not relieved by rest, limiting instrumental ADL (e.g., Preparing meals, shopping and managing money	54	44.5	1	0.8
	(D) Lethargy not relieved by rest, limiting self-care ADL (e.g., Bathing, dressing/undressing, feeding self, using the toilet	1	0.8	1	0.8
Day 2	(A) No Lethargy	109	90.8	118	98.3
	(B) Lethargy relieved by rest	6	5.0	1	0.8
	(C) Lethargy not relieved by rest, limiting instrumental ADL(Activity of Daily Living) (e.g., Preparing meals, shopping and managing money)	5	4.2	1	0.8
	(D) Lethargy not relieved by rest, limiting self-care ADL (e.g., Bathing, dressing/undressing, feeding self, using the toilet)	0	0.0	0	0.0
Day 3	(A) No Lethargy	110	91.6	110	91.7
	(B) Lethargy relieved by rest	3	2.5	9	7.4
	(C) Lethargy not relieved by rest, limiting instrumental ADL (e.g., Preparing meals, shopping and managing money	4	3.4	1	0.8
	(D) Lethargy not relieved by rest, limiting self-care ADL (e.g., Bathing, dressing/undressing, feeding self, using the toilet	3	2.5	0	0.0

Day 4	(A) No Lethargy	59	49.6	114	95.0
	(B) Lethargy relieved by rest	6	5.0	5	4.1
	(C) Lethargy not relieved by rest, limiting instrumental ADL (e.g., Preparing meals, shopping and managing money	55	45.4	1	0.8
	(D) Lethargy not relieved by rest, limiting self-care ADL (e.g., Bathing, dressing/undressing, feeding self, using the toilet	0	0.0	0	0.0
Day 5	(A) No Lethargy	113	94.1	111	92.6
	(B) Lethargy relieved by rest	3	2.5	7	5.8
	(C) Lethargy not relieved by rest, limiting instrumental ADL (e.g., Preparing meals, shopping and managing money	4	3.4	1	0.8
	(D) Lethargy not relieved by rest, limiting self-care ADL (e.g., Bathing, dressing/undressing, feeding self, using the toilet	0	0.0	1	0.8

In group Regular Serving at Morning out of 120 subjects on Day 1, 49.6% subjects were not having Lethargy, 5.0% were having Lethargy relieved by rest, 44.5% subjects were found for Lethargy not relieved by rest, limiting instrumental ADL and 0.8% subjects were found for Lethargy not relieved by rest, limiting self-care ADL. Day 2: 90.8% subjects were not having Lethargy, 5.0% were having Lethargy relieved by rest, 4.2% subjects were found for Lethargy not relieved by rest, limiting instrumental ADL and 0.0% subjects were found for Lethargy not relieved by rest, limiting self-care ADL. Day 3, 91.6% subjects were not having Lethargy, 2.5% were having Lethargy relieved by rest, 3.4% subjects were found for Lethargy not relieved by rest, limiting instrumental ADL and 2.5% subjects were found for Lethargy not relieved by rest, limiting self-care ADL. Day 4, 49.6% subjects were not having Lethargy, 5.0% were having Lethargy relieved by rest 45.4% subjects were

found for Lethargy not relieved by rest, limiting instrumental ADL and 0.0% subjects were found for Lethargy not relieved by rest, limiting self-care ADL. Day 5, 94.1% subjects were not having Lethargy, 2.5% were having Lethargy relieved by rest, 3.4% subjects were found for Lethargy not relieved by rest, limiting instrumental ADL and 0.0% subjects were found for Lethargy not relieved by rest, limiting self-care ADL.

In group Standardised Serving at morning out of 120 subjects on Day 1 - 91.7% subjects were not having Lethargy, 6.6% were having Lethargy relieved by rest, 0.8% subjects were found for Lethargy not relieved by rest, limiting instrumental ADL and 0.8% subjects were found for Lethargy not relieved by rest, limiting self-care ADL. Day-2, 98.3% subjects were not having Lethargy, 0.8% were having Lethargy relieved by rest, 0.8% subjects were found for Lethargy not relieved by rest, limiting instrumental ADL and 0.0% subjects were found for Lethargy not relieved by rest, limiting self-care ADL. Day-3, 91.7% subjects were not having Lethargy, 7.4% were having Lethargy relieved by rest 0.8% subjects were found for Lethargy not relieved by rest, limiting instrumental ADL and 0.0% subjects were found for Lethargy not relieved by rest, limiting self-care ADL. Day-4, 95.0% subjects were not having Lethargy, 4.1% were having Lethargy relieved by rest 0.8% subjects were found for Lethargy not relieved by rest, limiting instrumental ADL and 0.0% subjects were found for Lethargy not relieved by rest, limiting self-care ADL. Day 5, 92.6% subjects were not having Lethargy, 5.8% were having Lethargy relieved by rest, 0.8% subjects were found for Lethargy not relieved by rest, limiting instrumental ADL and 0.8% subjects were found for Lethargy not relieved by rest, limiting self-care ADL.

Graph no. 19. Lethergy at Morning time in Regular and Standard Samsarjana Krama groups

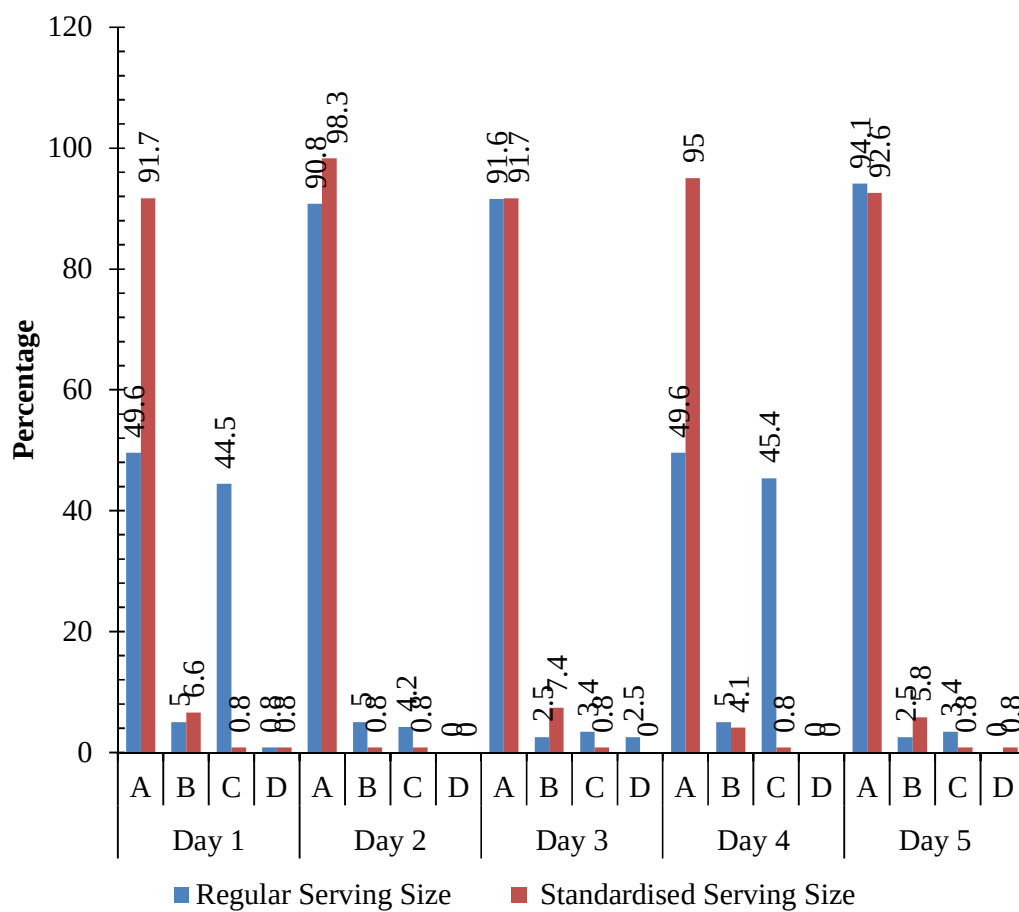


Table No. 39. Evening Lethargy among RSS and SSS Groups according to Days

Evening Lethargy		Regular Serving Size		Standardised Serving Size	
		n	%	n	%
Day 1	(A) No Lethargy	99	82.4	89	73.6
	(B) Lethargy relieved by rest	9	7.6	29	24.8
	(C) Lethargy not relieved by rest, limiting instrumental ADL (e.g., Preparing meals, shopping and managing money	8	6.7	1	0.8
	(D) Lethargy not relieved by rest, limiting self-care ADL (e.g., Bathing, dressing/undressing, feeding self, using the toilet	4	3.4	1	0.8
Day 2	(A) No Lethargy	114	95.0	116	96.7
	(B) Lethargy relieved by rest	3	2.5	2	1.7
	(C) Lethargy not relieved by rest, limiting instrumental ADL (e.g., Preparing meals, shopping and managing money	2	1.7	1	0.8
	(D) Lethargy not relieved by rest, limiting self-care ADL (e.g., Bathing, dressing/undressing, feeding self, using the toilet	1	0.8	1	0.8
Day 3	(A) No Lethargy	115	95.8	113	94.2
	(B) Lethargy relieved by rest	2	1.7	6	5.0
	(C) Lethargy not relieved by rest, limiting instrumental ADL (e.g., Preparing meals, shopping and managing money	2	1.7	1	0.8
	(D) Lethargy not relieved by rest, limiting self-care ADL (e.g., Bathing, dressing/undressing, feeding self, using the toilet	1	0.8	0	0.0
Day 4	(A) No Lethargy	103	85.7	94	78.5
	(B) Lethargy relieved by rest	9	7.6	25	20.7

	(C) Lethargy not relieved by rest, limiting instrumental ADL (e.g., Preparing meals, shopping and managing money	6	5.0	1	0.8
	(D) Lethargy not relieved by rest, limiting self-care ADL (e.g., Bathing, dressing/undressing, feeding self, using the toilet	2	1.7	0	0.0
Day 5	(A) No Lethargy	56	47.1	116	96.7
	(B) Lethargy relieved by rest	2	1.7	2	1.7
	(C) Lethargy not relieved by rest, limiting instrumental ADL (e.g., Preparing meals, shopping and managing money	58	47.9	1	0.8
	(D) Lethargy not relieved by rest, limiting self-care ADL (e.g., Bathing, dressing/undressing, feeding self, using the toilet	4	3.4	1	0.8

In group Regular Serving at evening out of 120 subjects on Day 1, 82.4% subjects were not having Lethargy, 7.6% were having Lethargy relieved by rest 6.7% subjects were found for Lethargy not relieved by rest, limiting instrumental ADL and 3.4% subjects were found for Lethargy not relieved by rest, limiting self-care ADL. Day 2, 95.0% subjects were not having Lethargy, 2.5% were having Lethargy relieved by rest, 1.7% subjects were found for Lethargy not relieved by rest, limiting instrumental ADL and 0.8% subjects were found for Lethargy not relieved by rest, limiting self-care ADL. Day 3, 95.8% subjects were not having Lethargy, 1.7% were having Lethargy relieved by rest 1.7% subjects were found for Lethargy not relieved by rest, limiting instrumental ADL and 0.8% subjects were found for Lethargy not relieved by rest, limiting self-care ADL. Day 4, 85.7% subjects were not having Lethargy, 7.6% were having Lethargy relieved by rest 5.0% subjects were found for Lethargy not relieved by rest, limiting instrumental ADL and 1.7% subjects were found for Lethargy not relieved by rest, limiting self-care ADL. Day 5, 47.1%

subjects were not having Lethargy, 1.7% were having Lethargy relieved by rest, 47.9% subjects were found for Lethargy not relieved by rest, limiting instrumental ADL and 3.4% subjects were found for Lethargy not relieved by rest, limiting self-care ADL.

In group Standardised Serving at evening out of 120 subjects on Day 1, 73.6% subjects were not having Lethargy, 24.8% were having Lethargy relieved by rest, 0.8% subjects were found for Lethargy not relieved by rest, limiting instrumental ADL and 0.8% subjects were found for Lethargy not relieved by rest, limiting self-care ADL. Day 2, 96.7% subjects were not having Lethargy, 1.7% were having Lethargy relieved by rest, 0.8% subjects were found for Lethargy not relieved by rest, limiting instrumental ADL and 0.8% subjects were found for Lethargy not relieved by rest, limiting self-care ADL. Day 3, 94.2% subjects were not having Lethargy, 5.0% were having Lethargy relieved by rest 0.8% subjects were found for Lethargy not relieved by rest, limiting instrumental ADL and 0.0% subjects were found for Lethargy not relieved by rest, limiting self-care ADL. Day 4, 78.5% subjects were not having Lethargy, 20.7% were having Lethargy relieved by rest 0.8% subjects were found for Lethargy not relieved by rest, limiting instrumental ADL and 0.0% subjects were found for Lethargy not relieved by rest, limiting self-care ADL. Day 5, 96.7% subjects were not having Lethargy, 1.7% were having Lethargy relieved by rest, 0.8% subjects were found for Lethargy not relieved by rest, limiting instrumental ADL and 0.8% subjects were found for Lethargy not relieved by rest, limiting self-care ADL.

Graph no. 20. Lethergy at Evening time in Regular and Standard Samsarjana Krama groups

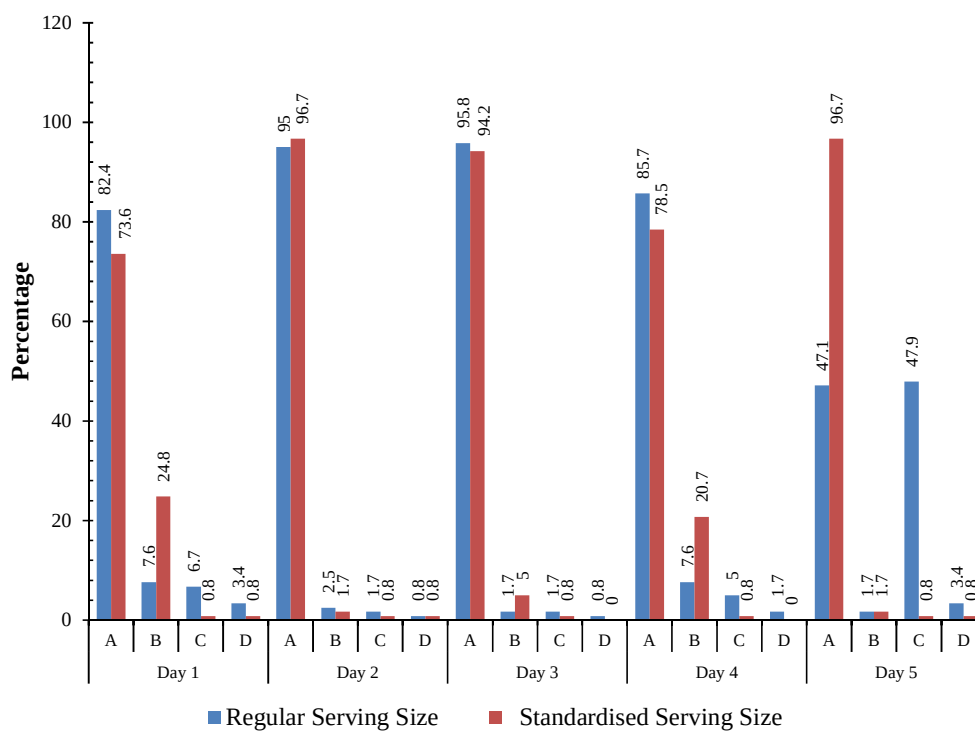


Table No. 40. Distaste in the morning and evening in RSS and SSS groups
according to Days

Lethargy		Morning		p value	Evening		p value
		RSS n (%)	SSS n (%)		RSS n (%)	SSS n (%)	
Day 1	A	59 (49.6)	110 (91.7)	0.001*	99 (82.4)	89 (73.6)	0.001*
	B	6 (5)	8 (6.6)		9 (7.6)	29 (24.8)	
	C	54 (44.5)	1 (0.8)		8 (6.7)	1 (0.8)	
	D	1 (0.8)	1 (0.8)		4 (3.4)	1 (0.8)	
Day 2	A	109 (90.8)	118 (98.3)	-	114 (95)	116 (96.7)	0.907
	B	6 (5)	1 (0.8)		3 (2.5)	2 (1.7)	
	C	5 (4.2)	1 (0.8)		2 (1.7)	1 (0.8)	
	D	0 (0)	0 (0)		1 (0.8)	1 (0.8)	
Day 3	A	110 (91.6)	110 (91.7)	0.050*	115 (95.8)	113 (94.2)	0.341
	B	3 (2.5)	9 (7.4)		2 (1.7)	6 (5)	
	C	4 (3.4)	1 (0.8)		2 (1.7)	1 (0.8)	
	D	3 (2.5)	0 (0)		1 (0.8)	0 (0)	
Day 4	A	59 (49.6)	114 (95)	-	103 (85.7)	94 (78.5)	0.004*
	B	6 (5)	5 (4.1)		9 (7.6)	25 (20.7)	
	C	55 (45.4)	1 (0.8)		6 (5)	1 (0.8)	
	D	0 (0)	0 (0)		2 (1.7)	0 (0)	
Day 5	A	113 (94.1)	111 (92.6)	0.220*	56 (47.1)	116 (96.7)	0.001*
	B	3 (2.5)	7 (5.8)		2 (1.7)	2 (1.7)	
	C	4 (3.4)	1 (0.8)		58 (47.9)	1 (0.8)	
	D	0 (0)	1 (0.8)		4 (3.4)	1 (0.8)	

In the morning of days 1 and 4 in the RSS group, 44.5% and 45.5% were suffered with moderate lethargy, while in the second group, over 91.7% were not lethargic on all 5 days. In the evening of day 5, 47.9% in the first group experienced lethargy, whereas in the second group, 73.6% to 96.7% were free from lethargy on all 5 days.

- No Lethargy
- Lethargy relieved by rest
- C - C- Lethargy not relieved by rest, limiting instrumental ADL (e.g., Preparing meals, shopping and managing money)
- D-limiting s elf-care ADL(Activity of Daily living) (e.g., Bathing, dressing/undressing, feeding self, using the toilet)

Graph No. 21. Showing Lethargy in the morning and evening in RSS and SSS groups

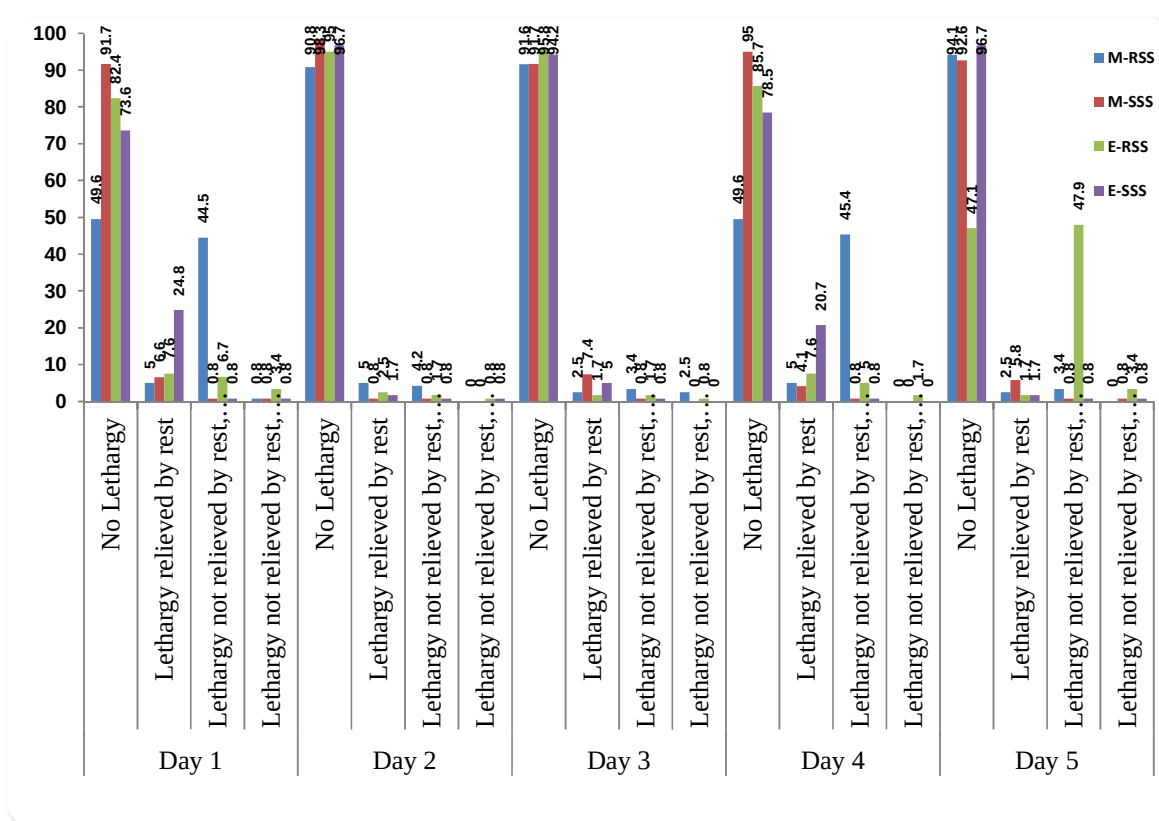


Table No.41. Morning Aversion to food among RSS and SSS groups according to Days

Morning Aversion to food		Regular Serving Size		Standardised Serving Size	
		n	%	n	%
Day 1	No	55	46.20	115	95.9
	Mild	11	9.20	4	3.3
	Moderate	3	2.50	1	0.8
	Severe	50	42.00	0	0
Day 2	No	114	95.80	117	97.5
	Mild	0	0.00	3	2.5
	Moderate	3	2.50	0	0
	Severe	2	1.70	0	0
Day 3	No	109	91.60	91	76
	Mild	5	4.20	6	5
	Moderate	5	4.20	22	18.2
	Severe	0	0.00	1	0.8
Day 4	No	107	89.90	96	80.2
	Mild	6	5.00	1	0.8
	Moderate	6	5.00	23	19
	Severe	0	0.00	0	0
Day 5	No	111	93.30	119	99.2
	Mild	2	1.70	1	0.8
	Moderate	6	5.00	0	0
	Severe	0	0.00	0	0

In group Regular Serving at morning out of 120 subjects on 46.20% subjects were found for aversion to food, 9.20% mild, 2.50% moderate and 42.0% severe aversion to food. On Day 2, 95.80% subjects were not having aversion to food, 0.00% subjects were having mild aversion, 2.50% were having moderate and 1.70% subjects were having severe Aversion to food. On Day 3, 91.60% subjects were not having aversion to food, 4.20% subjects were having mild aversion, 4.20% were having moderate and 0.00% subjects were having severe Aversion to food. On Day 4, 89.90% subjects were not having aversion to food, 5.00% subjects were having mild aversion, 5.00% were having moderate and 0.00% subjects were having severe Aversion to food. On Day 5, 93.30% subjects were not having aversion to food, 1.70% subjects were having mild aversion, 5.00% were having moderate and 0.00% subjects were having severe Aversion to food.

In group Standardised Serving at morning out of 120 subjects on on Day 1, 95.9% subjects were found for aversion to food, 3.3% mild, 0.8% moderate and 0.0% severe Aversion to food. On Day 2, 97.5% subjects were not having aversion to food, 2.5% subjects were having mild aversion, 0.0% were having moderate and 0.0% subjects were having severe Aversion to food. On Day 3, 76% subjects were not having aversion to food, 5.0% subjects were having mild aversion, 18.2% were having moderate and 0.8% subjects were having severe Aversion to food. On Day 4, 80.2% subjects were not having aversion to food, 0.8% subjects were having mild aversion, 19% were having moderate and 0.00% subjects were having severe Aversion to food. On Day 5, 99.2% subjects were not having aversion to food, 0.8% subjects were having mild aversion, 0.00% were having moderate and 0.00% subjects were having severe Aversion to food.

Graph no. 22. Aversion to food at Morning time in Regular and Standard *Samsarjana Krama* groups

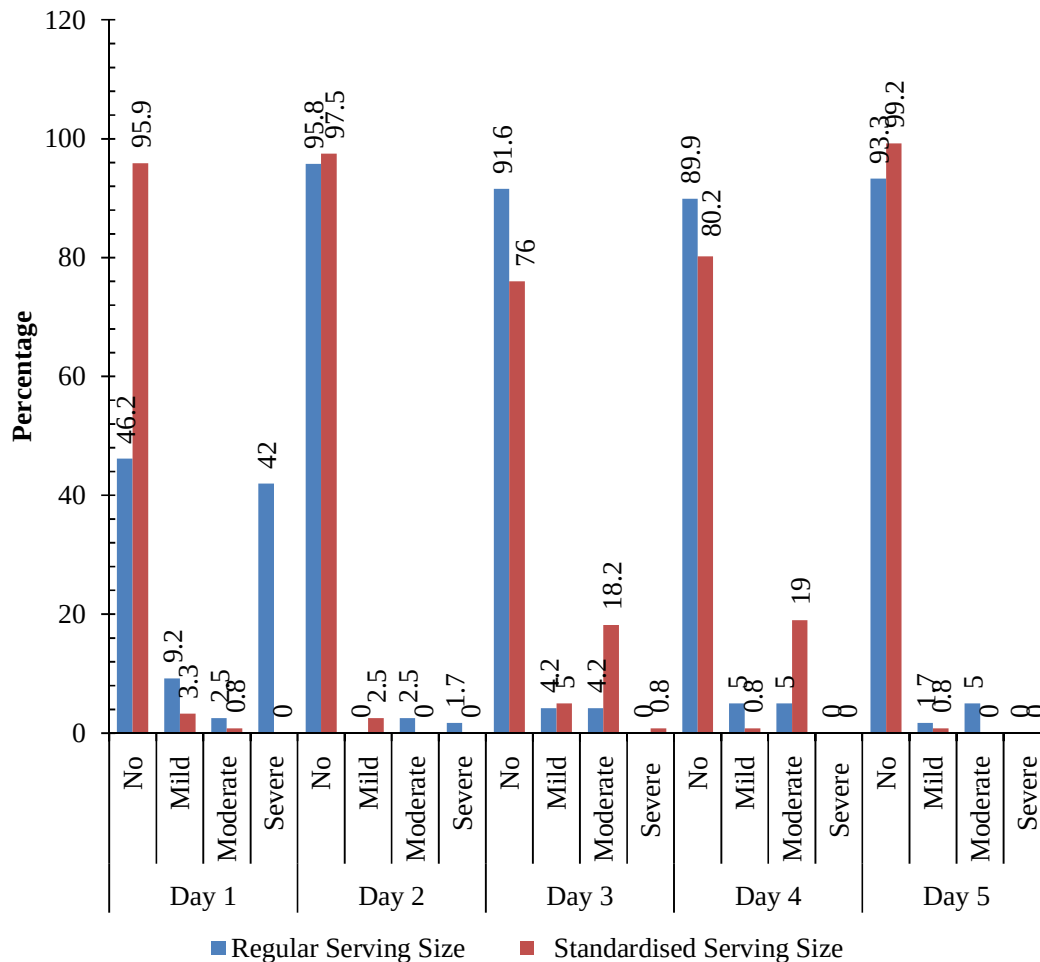


Table No.42. Evening Aversion to food among RSS and SSS groups according to Days

Evening Aversion to food		Regular Serving Size		Standardised Serving Size	
		n	%	n	%
Day 1	No	96	79.80	108	90.1
	Mild	12	10.10	8	6.6
	Moderate	12	10.10	2	1.7
	Severe	0	0.00	2	1.7
Day 2	No	115	95.80	115	95.9
	Mild	0	0.00	4	3.3
	Moderate	4	3.40	1	0.8
	Severe	1	0.80	0	0
Day 3	No	105	87.40	109	90.9
	Mild	6	5.00	9	7.4
	Moderate	9	7.60	1	0.8
	Severe	0	0.00	1	0.8
Day 4	No	54	45.40	115	95.9
	Mild	3	2.50	3	2.5
	Moderate	9	7.60	2	1.7
	Severe	54	44.50	0	0
Day 5	No	104	87.40	116	96.7
	Mild	5	4.20	3	2.5
	Moderate	11	8.40	0	0
	Severe	0	0.00	1	0.8

In group Regular Serving at evening out of 120 subjects on Day 1 79.80% subjects were found for aversion to food, 10.10% mild, 10.10% moderate and 0.00% severe Aversion to food. On Day 2, 95.80% subjects were not having aversion to food, 0.00% subjects were having mild aversion, 3.40% were having moderate and 0.80% subjects were having severe Aversion to food. On Day 3, 87.40% subjects were not having aversion to food, 5.00% subjects were having mild aversion, 7.60% were having moderate and 0.00% subjects were having severe Aversion to food. On Day 4, 45.40% subjects were not having aversion to food, 2.50% subjects were having mild aversion, 7.60% were having moderate and 44.50% subjects were having severe Aversion to food. On Day 5, 87.40% subjects were not having aversion to food, 4.20% subjects were having mild aversion, 8.40% were having moderate and 0.00% subjects were having severe Aversion to food.

In group Standardised Serving at evening out of 120 subjects on Day 1 90.1% subjects were found for aversion to food, 6.6% mild, 1.7% moderate and 1.7% severe Aversion to food. On Day 2, 95.9% subjects were not having aversion to food, 3.3% subjects were having mild aversion, 0.8% were having moderate and 0.0% subjects were having severe Aversion to food. On Day 3, 90.9% subjects were not having aversion to food, 7.4% subjects were having mild aversion, 0.8% were having moderate and 0.8% subjects were having severe Aversion to food. On Day 4, 95.9% subjects were not having aversion to food, 2.5% subjects were having mild aversion, 1.7% were having moderate and 0.00% subjects were having severe Aversion to food. On Day 5, 96.7% subjects were not having aversion to food, 2.5% subjects were having mild aversion, 0.0% were having moderate and 0.8% subjects were having severe Aversion to food.

Graph no. 23. Aversion to food at Evening time in Regular and Standard Samsarjana Krama groups

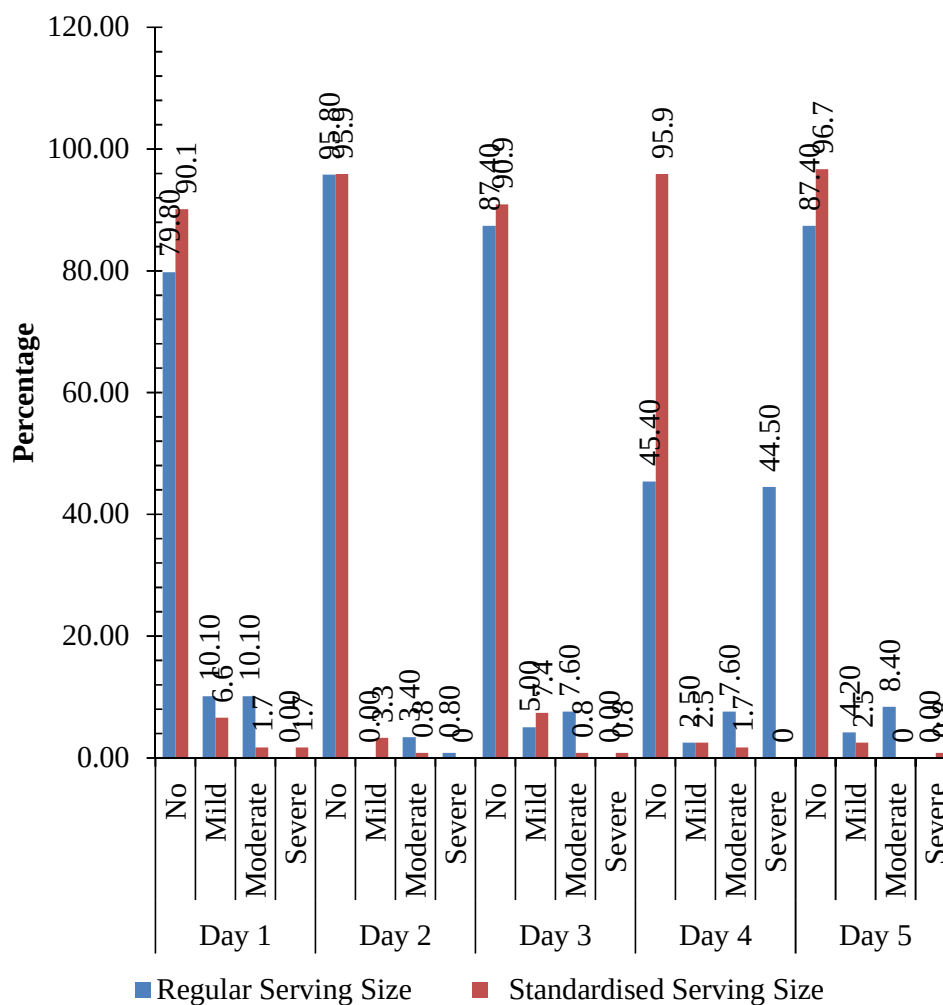


Table No. 43. Aversion to food in the morning and evening in RSS and SSS groups according to Days

Aversion to food		Morning		p value	Evening		p value
		RSS n (%)	SSS n (%)		RSS n (%)	SSS n (%)	
Day 1	No	55 (46.20)	115 (95.9)	0.001*	96 (79.80)	108 (90.1)	0.014*
	Mild	11(9.20)	4 (3.3)		12 (10.10)	8 (6.6)	
	Moderate	3 (2.50)	1 (0.8)		12 (10.10)	2 (1.7)	
	Severe	50 (42.00)	0 (0)		0 (0.00)	2 (1.7)	
Day 2	No	114 (95.80)	117 (97.5)	0.045*	115 (95.80)	115 (95.9)	0.079
	Mild	0 (0.00)	3 (2.5)		0 (0.00)	4 (3.3)	
	Moderate	3 (2.50)	0 (0)		4 (3.40)	1 (0.8)	
	Severe	2 (1.70)	0 (0)		1 (0.80)	0 (0)	
Day 3	No	109 (91.60)	91 (76)	0.004*	105 (87.40)	109 (90.9)	0.045
	Mild	5 (4.20)	6 (5)		6 (5.00)	9 (7.4)	
	Moderate	5 (4.20)	22 (18.2)		9 (7.60)	1 (0.8)	
	Severe	0 (0.00)	1 (0.8)		0 (0.00)	1 (0.8)	
Day 4	No	107 (89.90)	96 (80.2)	0.126	54 (45.40)	115 (95.9)	0.001*
	Mild	6 (5.00)	1 (0.8)		3 (2.50)	3 (2.5)	
	Moderate	6 (5.00)	23 (19)		9 (7.60)	2 (1.7)	
	Severe	0 (0.00)	0 (0)		54 (44.50)	0 (0)	
Day 5	No	111 (93.30)	119 (99.2)	0.612	104 (87.40)	116 (96.7)	0.004*
	Mild	2 (1.70)	1 (0.8)		5 (4.20)	3 (2.5)	
	Moderate	6 (5.00)	0 (0)		11 (8.40)	0 (0)	
	Severe	0 (0.00)	0 (0)		0 (0.00)	1 (0.8)	

In the RSS group on day 1, 42.0% in the morning and on day 4, 44.50% in the evening were found with severe aversion to food. While in the SSS group, morning time day 1, 10.10% each found for mild and moderate Aversion to food, on day 4, 44.50% were found with severe aversion to food. 6.6% was maximum for mild aversion to food on day 1 in the evening for SSS Group.

Graph No. 24. Showing Aversion to food in the morning and evening in RSS and

SSS groups

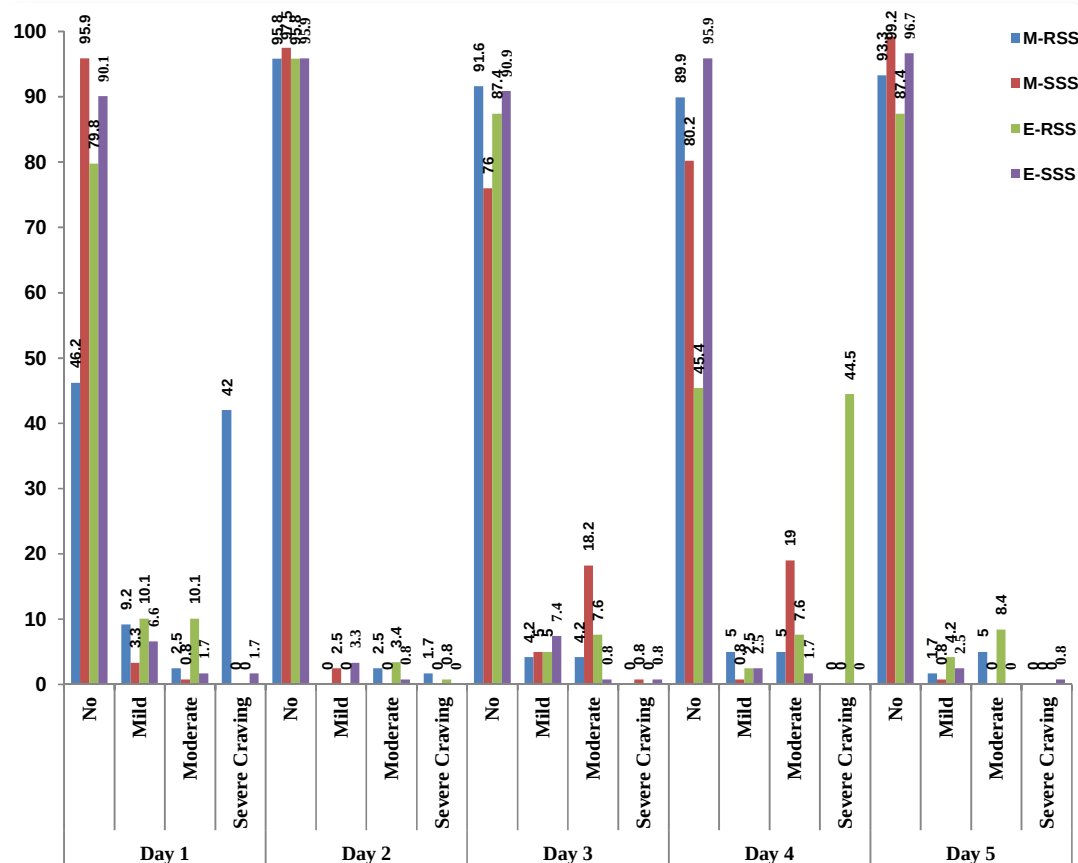


Table No. 44. Morning Exhaustion among RSS and SSS Groups according to Days

Morning Exhaustion		Regular Serving Size		Standardised Serving Size	
		n	%	n	%
Day 1	No	118	98.30	118	98.30
	Mild	2	1.70	2	1.70
	Moderate	0	0.00	0	0.00
	Severe	0	0.00	0	0.00
Day 2	No	118	98.30	118	98.30
	Mild	2	1.70	2	1.70
	Moderate	0	0.00	0	0.00
	Severe	0	0.00	0	0.00
Day 3	No	117	97.50	114	95.00
	Mild	2	1.70	6	5.00
	Moderate	1	0.80	0	0.00
	Severe	0	0.00	0	0.00
Day 4	No	117	97.50	118	98.30
	Mild	3	2.50	1	0.80
	Moderate	0	0.00	1	0.80
	Severe	0	0.00	0	0.00
Day 5	No	119	99.20	118	98.30
	Mild	1	0.80	2	1.70
	Moderate	0	0.00	0	0.00
	Severe	0	0.00	0	0.00

In group Regular Serving at morning out of 120 subjects on Day 1, On Day 1, 98.30% subjects were not having Exhaustion, 1.70% subjects were having mild and 0.00% were having moderate Exhaustion, and 0.00% were having severe Exhaustion. On Day 2, 98.30% subjects were not having Exhaustion, 1.70% subjects were having mild and 0.00% were having moderate Exhaustion, and 0.00% were having severe Exhaustion. On Day 3, 97.50% subjects were not having Exhaustion, 1.70% subjects were having mild and 0.80% were having moderate Exhaustion, and 0.00% were having severe Exhaustion. On Day 4, 97.50% subjects were not having Exhaustion, 2.50% subjects were having mild and 0.00% were having moderate Exhaustion, and 0.00% were having severe Exhaustion. On Day 5, 99.20% subjects were not having Exhaustion, 0.80% subjects were having mild and 0.00% were having moderate Exhaustion, and 0.00% were having severe Exhaustion.

In group Standardised Serving at morning out of 120 subjects on Day 1, On Day 1, 98.30% subjects were not having Exhaustion, 1.70% subjects were having mild and 0.00% were having moderate Exhaustion, and 0.00% were having severe Exhaustion. On Day 2, 98.30% subjects were not having Exhaustion, 1.70% subjects were having mild and 0.00% were having moderate Exhaustion, and 0.00% were having severe Exhaustion. On Day 3, 95.0% subjects were not having Exhaustion, 5.0% subjects were having mild and 0.00% were having moderate Exhaustion, and 0.00% were having severe Exhaustion. On Day 4, 98.30% subjects were not having Exhaustion, 0.80% subjects were having mild and 0.80% were having moderate Exhaustion, and 0.00% were having severe Exhaustion. On Day 5, 98.30% subjects were not having Exhaustion, 1.70% subjects were having mild and 0.00% were having moderate Exhaustion, and 0.00% were having severe Exhaustion.

Graph no. 25. Exhaustion at Morning time in Regular and Standard Samsarjana Krama groups

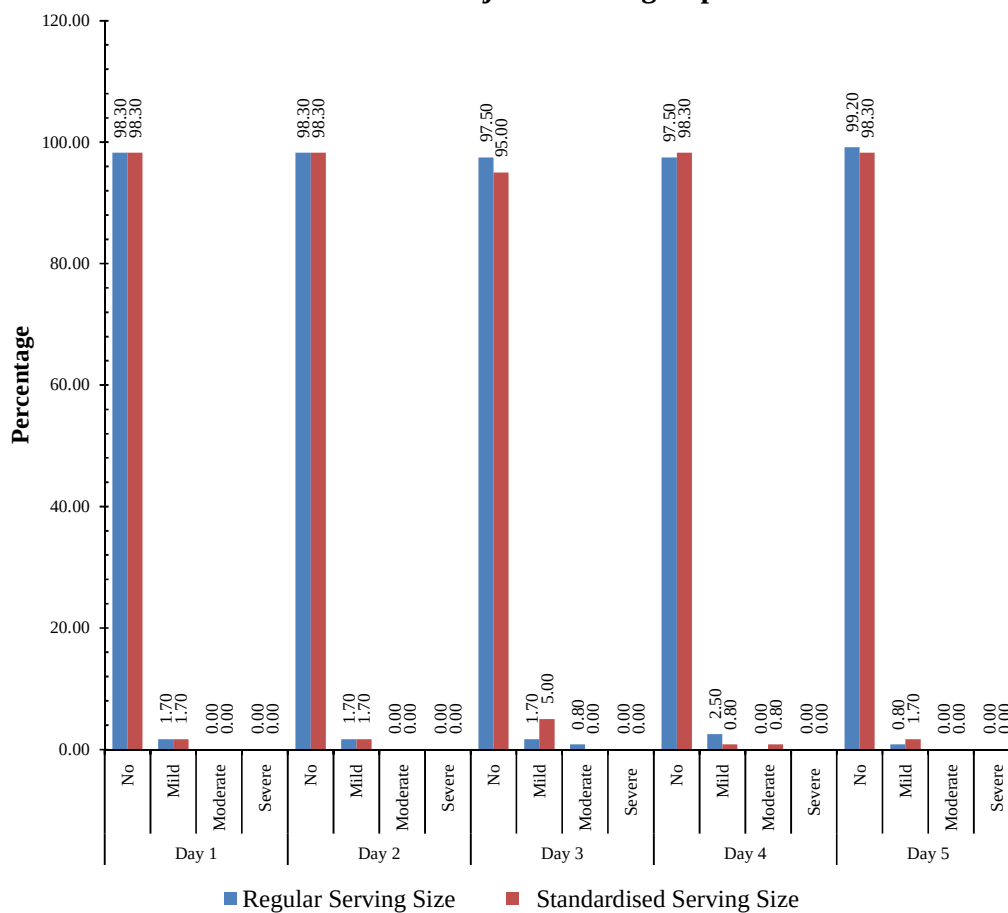


Table No. 45. Evening Exhaustion among RSS and SSS Groups according to Days

Evening Exhaustion		Regular Serving Size		Standardised Serving Size	
		n	%	n	%
Day 1	No	116	96.60	115	95.90
	Mild	3	2.50	4	3.30
	Moderate	1	0.80	1	0.80
	Severe	0	0.00	0	0.00
Day 2	No	118	98.30	120	100.00
	Mild	1	0.80	0	0.00
	Moderate	1	0.80	0	0.00
	Severe	0	0.00	0	0.00
Day 3	No	117	97.50	119	99.20
	Mild	2	1.70	1	0.80
	Moderate	1	0.80	0	0.00
	Severe	0	0.00	0	0.00
Day 4	No	116	96.60	118	98.30
	Mild	3	2.50	2	1.70
	Moderate	1	0.80	0	0.00
	Severe	0	0.00	0	0.00
Day 5	No	118	98.30	120	100.00
	Mild	1	0.80	0	0.00
	Moderate	1	0.80	0	0.00
	Severe	0	0.00	0	0.00

In group Regular Serving at evening out of 120 subjects on Day 1, On Day 1, 96.60% subjects were not having Exhaustion, 2.50% subjects were having mild and 0.80% were having moderate Exhaustion, and 0.00% were having severe Exhaustion. On Day 2, 98.30% subjects were not having Exhaustion, 0.80% subjects were having mild and 0.80% were having moderate Exhaustion, and 0.00% were having severe Exhaustion. On Day 3, 97.50% subjects were not having Exhaustion, 1.70% subjects were having mild and 0.80% were having moderate Exhaustion, and 0.00% were having severe Exhaustion. On Day 4, 96.60% subjects were not having Exhaustion, 2.50% subjects were having mild and 0.80% were having moderate Exhaustion, and 0.00% were having severe Exhaustion. On Day 5, 98.30% subjects were not having Exhaustion, 0.80% subjects were having mild and 0.80% were having moderate Exhaustion, and 0.00% were having severe Exhaustion.

In group Standardised Serving at evening out of 120 subjects on Day 1, On Day 1, 95.90% subjects were not having Exhaustion, 3.30% subjects were having mild and 0.80% were having moderate Exhaustion, and 0.00% were having severe Exhaustion. On Day 2, 100% subjects were not having Exhaustion, 0.00% subjects were having mild, moderate and severe Exhaustion. On Day 3, 99.20% subjects were not having Exhaustion, 0.80% subjects were having mild and 0.00% were having moderate and severe Exhaustion. On Day 4, 98.30% subjects were not having Exhaustion, 1.70% subjects were having mild and 0.00% were having moderate and severe Exhaustion. On Day 5, 100% subjects were not having Exhaustion, 0.00% subjects were having mild, moderate and severe Exhaustion.

Graph no. 26. Exhaustion at Evening time in Regular and Standard Samsarjana Krama groups

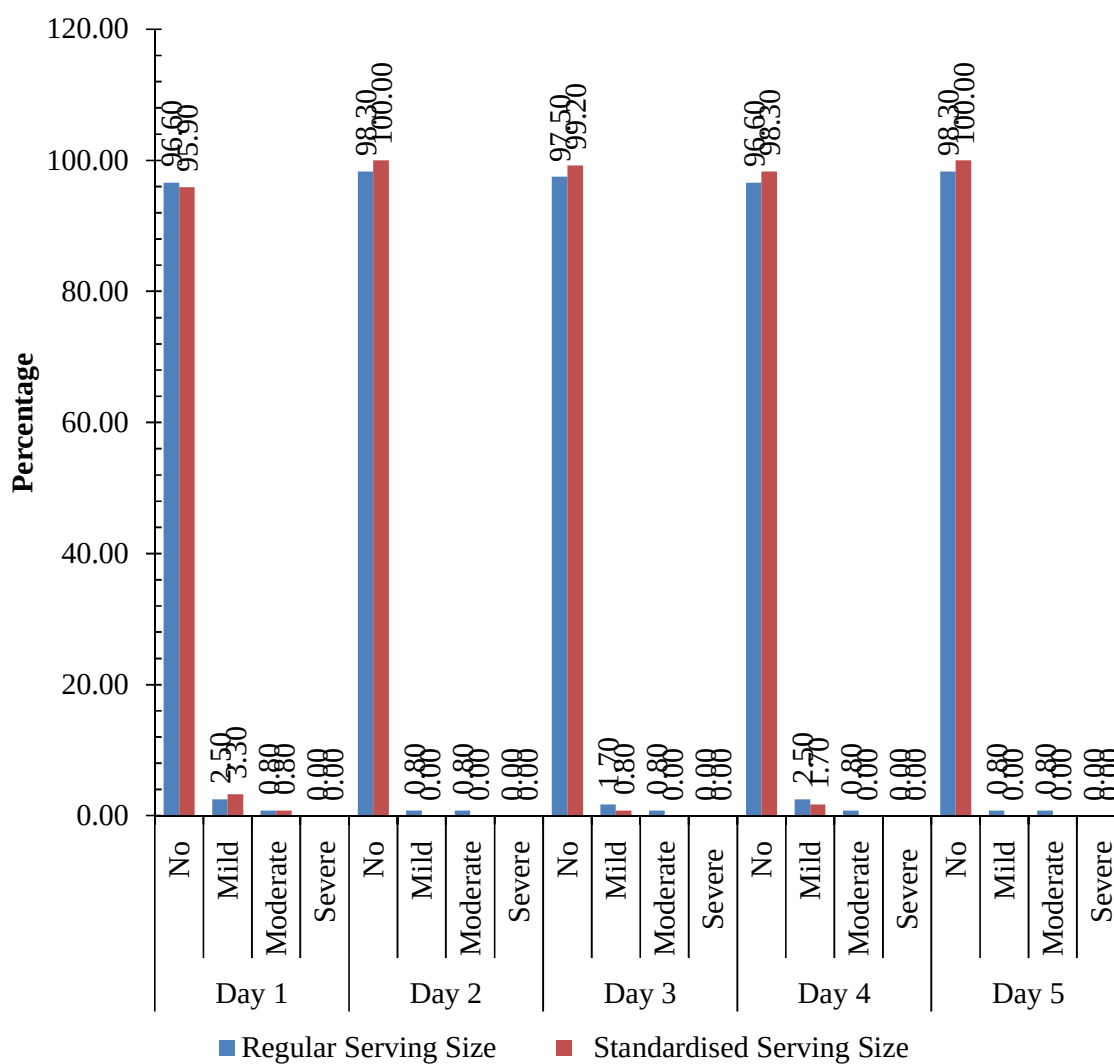


Table No. 46. Exhaustion to food in the morning and evening in RSS and SSS groups according to Days

Exhaustion		Morning		Evening	
		RSS n (%)	SSS n (%)	RSS n (%)	SSS n (%)
Day 1	No	118 (98.30)	118 (98.30)	116 (96.60)	115 (95.90)
	Mild	2 (1.70)	2 (1.70)	3 (2.50)	4 (3.30)
	Moderate	0 (0.00)	0 (0.00)	1 (0.80)	1 (0.80)
	Severe	0 (0.00)	0 (0.00)	0 (0.00)	0 (0)
Day 2	No	118 (98.30)	118 (98.30)	118 (98.30)	120 (100)
	Mild	2 (1.70)	2 (1.70)	1 (0.80)	0 (0)
	Moderate	0 (0.00)	0 (0.00)	1 (0.80)	0 (0)
	Severe	0 (0.00)	0 (0.00)	0 (0.00)	0 (0)
Day 3	No	117 (97.50)	114 (95.00)	117 (97.50)	119 (99.20)
	Mild	2 (1.70)	6 (5.00)	2 (1.70)	1 (0.80)
	Moderate	1 (0.80)	0 (0.00)	1 (0.80)	0 (0)
	Severe	0 (0.00)	0 (0.00)	0 (0.00)	0 (0)
Day 4	No	117 (97.50)	118 (98.30)	116 (96.60)	118 (98.30)
	Mild	3 (2.50)	1 (0.80)	3 (2.50)	2 (1.70)
	Moderate	0 (0.00)	1 (0.80)	1 (0.80)	0 (0)
	Severe	0 (0.00)	0 (0.00)	0 (0.00)	0 (0)
Day 5	No	119 (99.20)	118 (98.30)	118 (98.30)	120 (100)
	Mild	1 (0.80)	2 (1.70)	1 (0.80)	0 (0)
	Moderate	0 (0)	0 (0)	1 (0.80)	0 (0)
	Severe	0 (0)	0 (0)	0 (0)	0 (0)

On all days and in both groups more than 95% of subjects showed no Exhaustion.

Graph No. 27. Showing Exhaustion in the morning and evening in RSS and SSS

groups

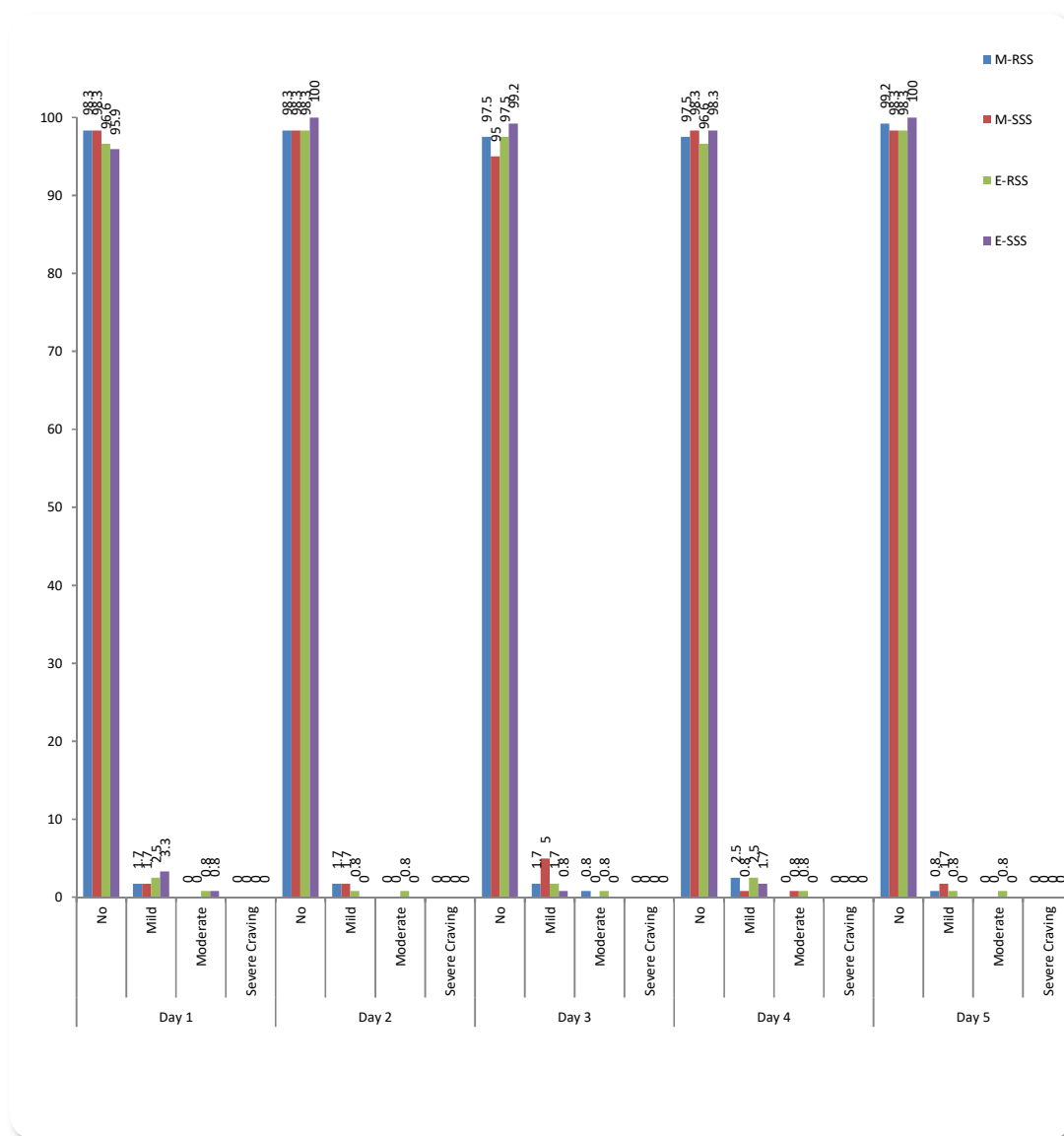


Table No. 47. Morning Abdominal Burning among RSS and SSS Groups
according to Days

Morning Abd. Burning Sensation		Regular Serving Size		Standardised Serving Size	
		n	%	n	%
Day 1	No	63	52.9	116	96.7
	Mild	54	44.5	1	0.8
	Moderate	3	2.5	3	2.5
	Severe	0	0	0	0
Day 2	No	118	98.3	117	97.5
	Mild	0	0	2	1.7
	Moderate	2	1.7	1	0.8
	Severe	0	0	0	0
Day 3	No	114	95	117	97.5
	Mild	4	3.4	2	1.7
	Moderate	2	1.7	1	0.8
	Severe	0	0	0	0
Day 4	No	65	54.6	117	97.5
	Mild	51	42	2	1.7
	Moderate	3	2.5	1	0.8
	Severe	1	0.8	0	0
Day 5	No	117	97.5	118	98.3
	Mild	1	0.8	1	0.8
	Moderate	2	1.7	1	0.8
	Severe	0	0	0	0

In group Regular Serving at morning out of 120 subjects on Day 1, On Day 1, 52.9% subjects were not having abdominal burning sensation, 44.5% subjects were having mild and 2.5% subjects were having moderate abdominal burning sensation, and 0.00% were having severe Abdominal burning sensation. On Day 2, 98.3% subjects were not having abdominal burning sensation, 0.00% subjects were having mild and 1.7% subjects were having moderate abdominal burning sensation, and 0.0% were having severe Abdominal burning sensation. On Day 3, 95% subjects were not having abdominal burning sensation, 3.4% subjects were having mild and 1.7% subjects were having moderate abdominal burning sensation, and 0.00% were having severe Abdominal burning sensation. On Day 4, 54.6% subjects were not having abdominal burning sensation, 42% subjects were having mild and 2.5% subjects were having moderate abdominal burning sensation, and 0.8% were having severe Abdominal burning sensation. On Day 5, 97.5% subjects were not having abdominal burning sensation, 0.8% subjects were having mild and 1.7% subjects were having moderate abdominal burning sensation, and 0.00% were having severe Abdominal burning sensation.

In group Standardised Serving at morning out of 120 subjects on Day 1, On Day 1, 96.7% subjects were not having abdominal burning sensation, 0.8% subjects were having mild and 2.5% subjects were having moderate abdominal burning sensation, and 0.00% were having severe Abdominal burning sensation. On Day 2, 97.5% subjects were not having abdominal burning sensation, 1.7% subjects were having mild and 0.8% subjects were having moderate abdominal burning sensation, and 0.00% were having severe Abdominal burning sensation. On Day 3, 97.5% subjects were not having abdominal burning sensation, 1.7% subjects were having mild and 0.8% subjects were having moderate abdominal burning sensation, and 0.0%

were having severe Abdominal burning sensation. On Day 4, 97.5% subjects were not having abdominal burning sensation, 1.7% subjects were having mild and 0.8% subjects were having moderate abdominal burning sensation, and 0.0% were having severe Abdominal burning sensation. On Day 5, 98.3% subjects were not having abdominal burning sensation, 0.8% subjects were having mild and 0.8% subjects were having moderate abdominal burning sensation, and 0.0% were having severe Abdominal burning sensation.

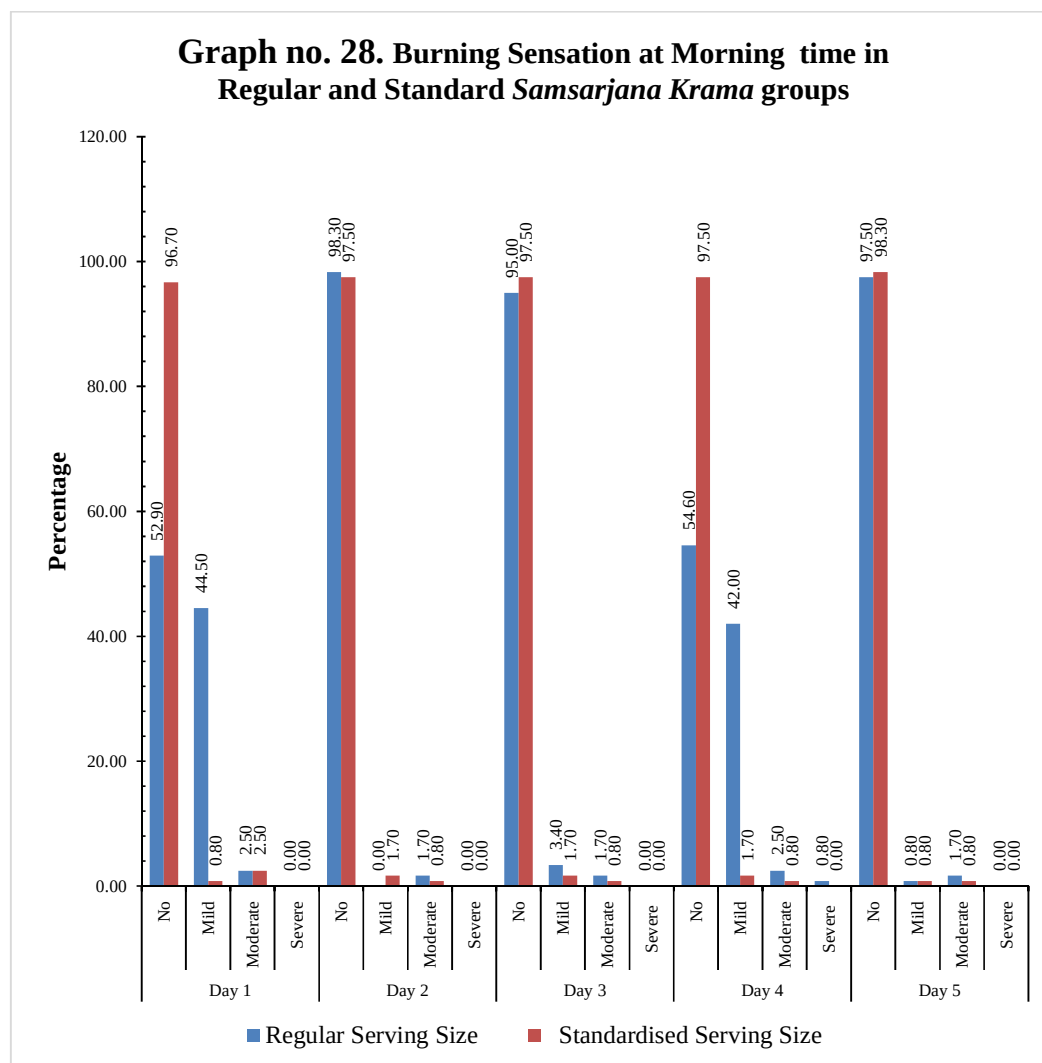


Table No. 48. Evening Abdominal Burning among RSS and SSS Groups
according to Days

Evening Abd. Burning Sensation		Regular Serving Size		Standardised Serving Size	
		n	%	n	%
Day 1	No	109	91.6	117	97.5
	Mild	5	3.4	2	1.7
	Moderate	5	4.2	1	0.8
	Severe	1	0.8	0	0
Day 2	No	114	95	118	98.3
	Mild	2	1.7	1	0.8
	Moderate	3	2.5	1	0.8
	Severe	1	0.8	0	0
Day 3	No	114	95	117	97.5
	Mild	2	1.7	2	1.7
	Moderate	3	2.5	1	0.8
	Severe	1	0.8	0	0
Day 4	No	111	92.4	116	96.7
	Mild	3	2.5	1	0.8
	Moderate	5	4.2	3	2.5
	Severe	1	0.8	0	0
Day 5	No	113	94.1	116	96.7
	Mild	4	3.4	3	2.5
	Moderate	2	1.7	1	0.8
	Severe	1	0.8	0	0

In group Regular Serving at evening out of 120 subjects on Day 1, On Day 1, 91.6% subjects were not having abdominal burning sensation, 3.4% subjects were having mild and 4.2% subjects were having moderate abdominal burning sensation, and 0.8% were having severe Abdominal burning sensation. On Day 2, 95% subjects were not having abdominal burning sensation, 1.7% subjects were having mild and 2.5% subjects were having moderate abdominal burning sensation, and 0.8% were having severe Abdominal burning sensation. On Day 3, 95% subjects were not having abdominal burning sensation, 1.7% subjects were having mild and 2.5% subjects were having moderate abdominal burning sensation, and 0.8% were having severe Abdominal burning sensation. On Day 4, 92.4% subjects were not having abdominal burning sensation, 2.5% subjects were having mild and 4.2% subjects were having moderate abdominal burning sensation, and 0.8% were having severe Abdominal burning sensation. On Day 5, 94.1% subjects were not having abdominal burning sensation, 3.4% subjects were having mild and 1.7% subjects were having moderate abdominal burning sensation, and 0.8% were having severe Abdominal burning sensation.

In group Regular Serving at evening out of 120 subjects on Day 1, On Day 1, 97.5% subjects were not having abdominal burning sensation, 1.7% subjects were having mild and 0.8% subjects were having moderate abdominal burning sensation, and 0.00% were having severe Abdominal burning sensation. On Day 2, 98.3% subjects were not having abdominal burning sensation, 0.8% subjects were having mild and 0.8% subjects were having moderate abdominal burning sensation, and 0.00% were having severe Abdominal burning sensation. On Day 3, 97.5% subjects were not having abdominal burning sensation, 1.7% subjects were having mild and 0.8% subjects were having moderate abdominal burning sensation, and 0.00% were

having severe Abdominal burning sensation. On Day 4, 96.7% subjects were not having abdominal burning sensation, 0.8% subjects were having mild and 2.5% subjects were having moderate abdominal burning sensation, and 0.00% were having severe Abdominal burning sensation. On Day 5, 96.7% subjects were not having abdominal burning sensation, 2.5% subjects were having mild and 0.8% subjects were having moderate abdominal burning sensation, and 0.00% were having severe Abdominal burning sensation.

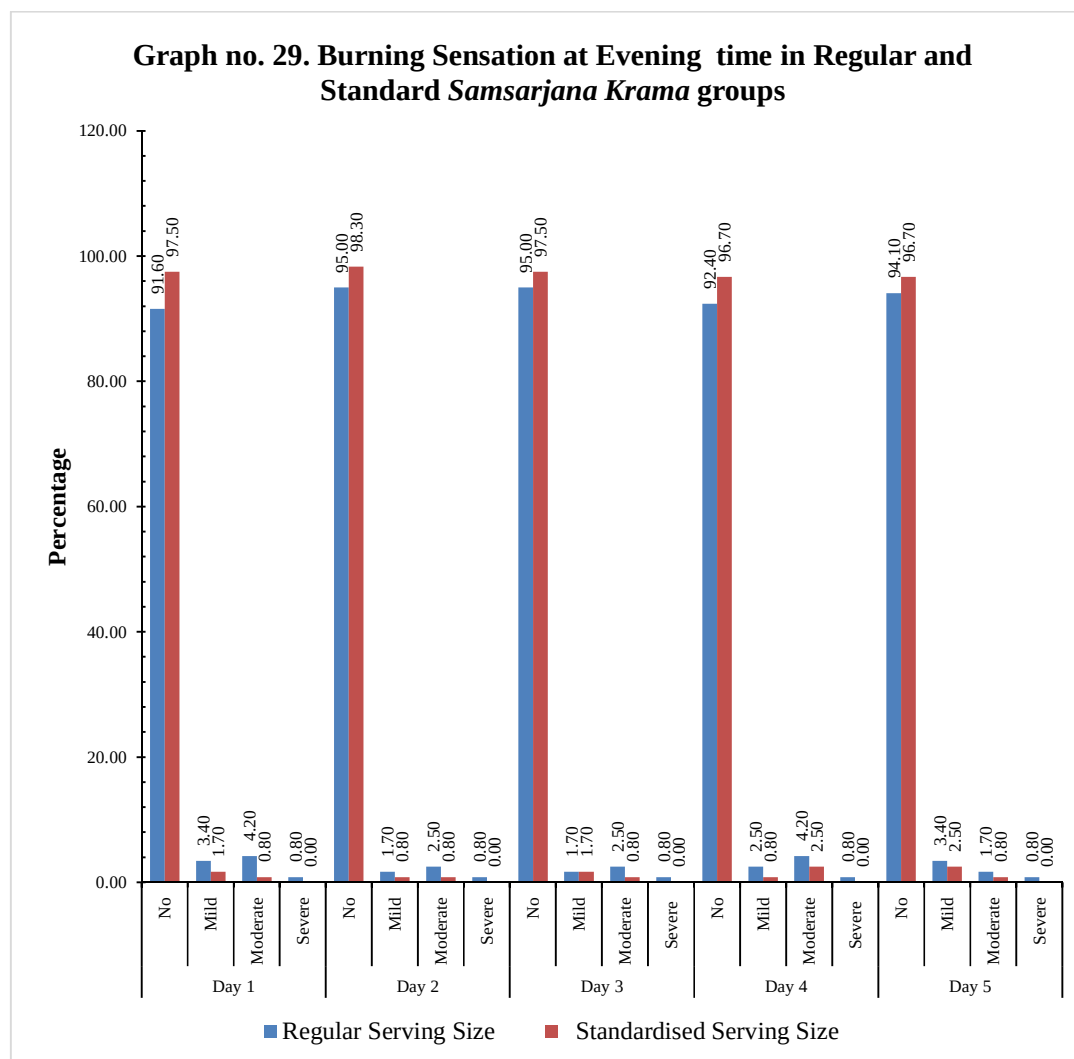


Table No. 49. Abdominal Burning Sensation in the morning and evening in RSS and SSS groups according to Days

Abdominal Burning Sensation		Morning		p value	Evening		p value
		RSS n (%)	SSS n (%)		RSS n (%)	SSS n (%)	
Day 1	No	63 (52.9)	116 (96.7)	-	109 (91.6)	117 (97.5)	0.155
	Mild	54 (44.5)	1 (0.8)		5 (3.4)	2 (1.7)	
	Moderate	3 (2.5)	3 (2.5)		5 (4.2)	1 (0.8)	
	Severe	0 (0)	0 (0)		1 (0.8)	0 (0)	
Day 2	No	118 (98.3)	117 (97.5)	-	114 (95)	118 (98.3)	0.493
	Mild	0 (0)	2 (1.7)		2 (1.7)	1 (0.8)	
	Moderate	2 (1.7)	1 (0.8)		3 (2.5)	1 (0.8)	
	Severe	0 (0)	0 (0)		1 (0.8)	0 (0)	
Day 3	No	114 (95)	117 (97.5)	-	114 (95)	117 (97.5)	0.564
	Mild	4 (3.4)	2 (1.7)		2 (1.7)	2 (1.7)	
	Moderate	2 (1.7)	1 (0.8)		3 (2.5)	1 (0.8)	
	Severe	0 (0)	0 (0)		1 (0.8)	0 (0)	
Day 4	No	65 (54.6)	117 (97.5)	0.001*	111 (92.4)	116 (96.7)	0.456
	Mild	51 (42)	2 (1.7)		3 (2.5)	1 (0.8)	
	Moderate	3 (2.5)	1 (0.8)		5 (4.2)	3 (2.5)	
	Severe	1 (0.8)	0 (0)		1 (0.8)	0 (0)	
Day 5	No	117 (97.5)	118 (98.3)	-	113 (94.1)	116 (96.7)	0.679
	Mild	1 (0.8)	1 (0.8)		4 (3.4)	3 (2.5)	
	Moderate	2 (1.7)	1 (0.8)		2 (1.7)	1 (0.8)	
	Severe	0 (0)	0 (0)		1 (0.8)	0 (0)	

In RSS group, 44.5% on day1 and 42% on day 4 were found with mild abdominal burning sensation, whereas in SSS group more than 91-97.5% were free from abdominal burning sensation on all 5 days.

Graph No. 30. Showing Abdominal Burning Sensation in the morning and evening in RSS and SSS groups

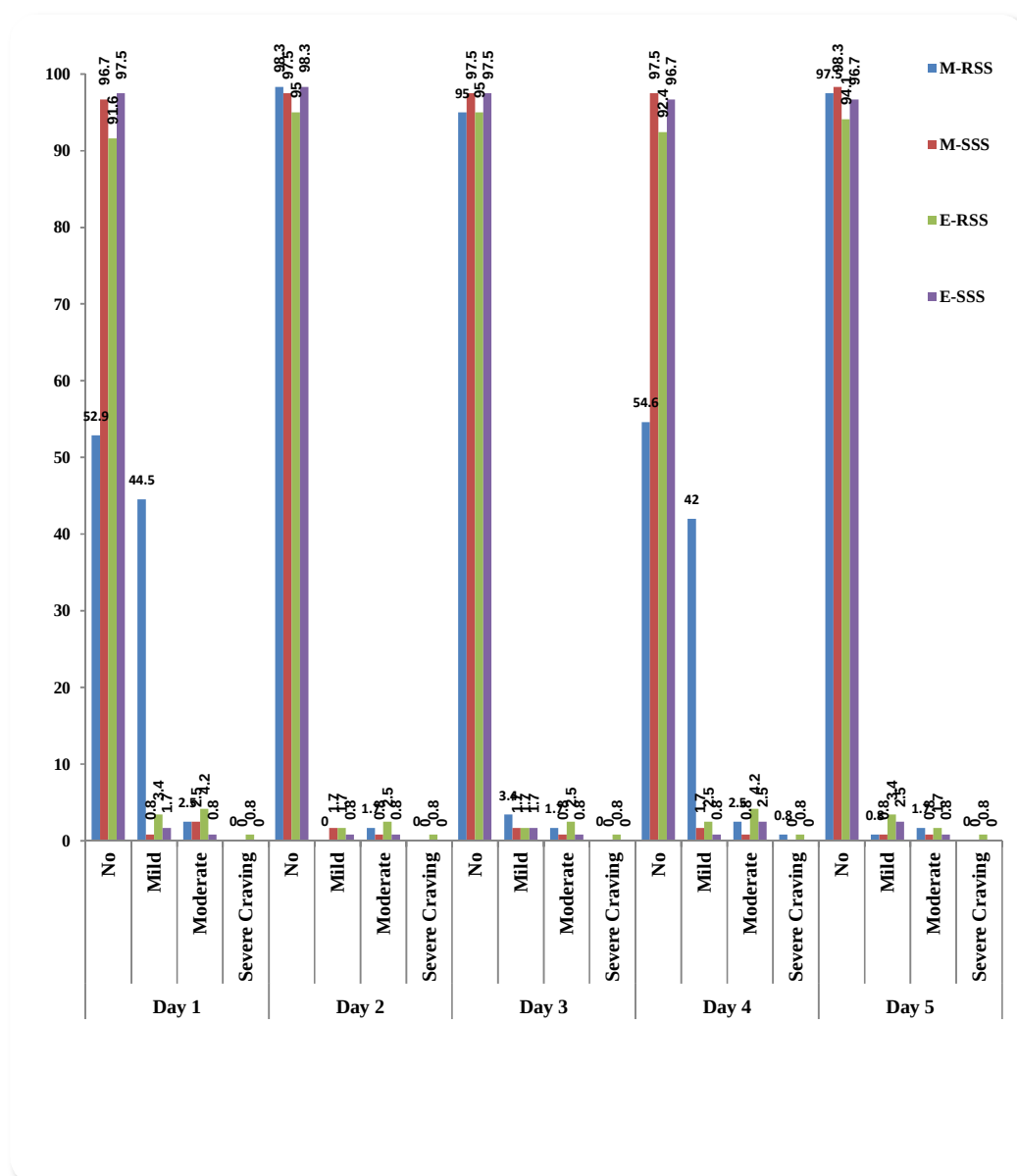


Table No. 50. Morning Abdominal Heaviness among RSS and SSS Groups
according to Days

Morning Abdominal Heaviness		Regular Serving Size		Standardised Serving Size	
		n	%	n	%
Day 1	No	117	97.50	114	95.0
	Mild	1	0.80	3	2.5
	Moderate	2	1.70	3	2.5
	Severe	0	0.00	0	0.0
Day 2	No	120	100.00	115	95.9
	Mild	0	0.00	2	1.7
	Moderate	0	0.00	3	2.5
	Severe	0	0.00	0	0.0
Day 3	No	118	98.30	112	93.4
	Mild	1	0.80	5	4.1
	Moderate	1	0.80	3	2.5
	Severe	0	0.00	0	0.0
Day 4	No	120	100.00	113	94.2
	Mild	0	0.00	4	3.3
	Moderate	0	0.00	3	2.5
	Severe	0	0.00	0	0.0
Day 5	No	119	99.20	113	94.2
	Mild	1	0.80	4	3.3
	Moderate	0	0.00	3	2.5
	Severe	0	0.00	0	0.0

In group Regular Serving at morning out of 120 subjects on Day 1, 97.50 % subjects were not having Abdominal heaviness, 0.80% were having mild Abdominal heaviness, 1.70% were having Moderate Abdominal heaviness and 0.00% subjects were having severe Abdominal heaviness. On Day 2, 100% subjects were not having Abdominal heaviness, 0.00% were having mild, moderate, severe Abdominal heaviness. On Day 3, 98.30% subjects were not having Abdominal heaviness, 0.80% were having mild Abdominal heaviness, 0.80% were having Moderate Abdominal heaviness and 0.00% subjects were having severe Abdominal heaviness. On Day 4, 100% subjects were not having Abdominal heaviness, 0.00% were having mild, moderate, severe Abdominal heaviness. On Day 5, 99.20% subjects were not having Abdominal heaviness, 0.80% were having mild Abdominal heaviness, 0.00% were having Moderate Abdominal heaviness and 0.00% subjects were having severe Abdominal heaviness.

In group Standardized Serving at morning out of 120 subjects on Day 1, 95% subjects were not having Abdominal heaviness, 2.5% were having mild Abdominal heaviness, 2.5% were having Moderate Abdominal heaviness and 0.00% subjects were having severe Abdominal heaviness. On Day 2, 95.9 % subjects were not having Abdominal heaviness, 1.7% were having mild Abdominal heaviness, 2.5% were having Moderate Abdominal heaviness and 0.00% subjects were having severe Abdominal heaviness. On Day 3, 93.4% subjects were not having Abdominal heaviness, 4.1% were having mild Abdominal heaviness, 2.5% were having Moderate Abdominal heaviness and 0.00% subjects were having severe Abdominal heaviness. On Day 4, 94.2% subjects were not having Abdominal heaviness, 3.3% were having mild Abdominal heaviness, 2.5% were having Moderate Abdominal heaviness and 0.00% subjects were having severe Abdominal heaviness. On Day 5, 94.2% subjects

were not having Abdominal heaviness, 3.3% were having mild Abdominal heaviness, 2.5% were having Moderate Abdominal heaviness and 0.00% subjects were having severe Abdominal heaviness.

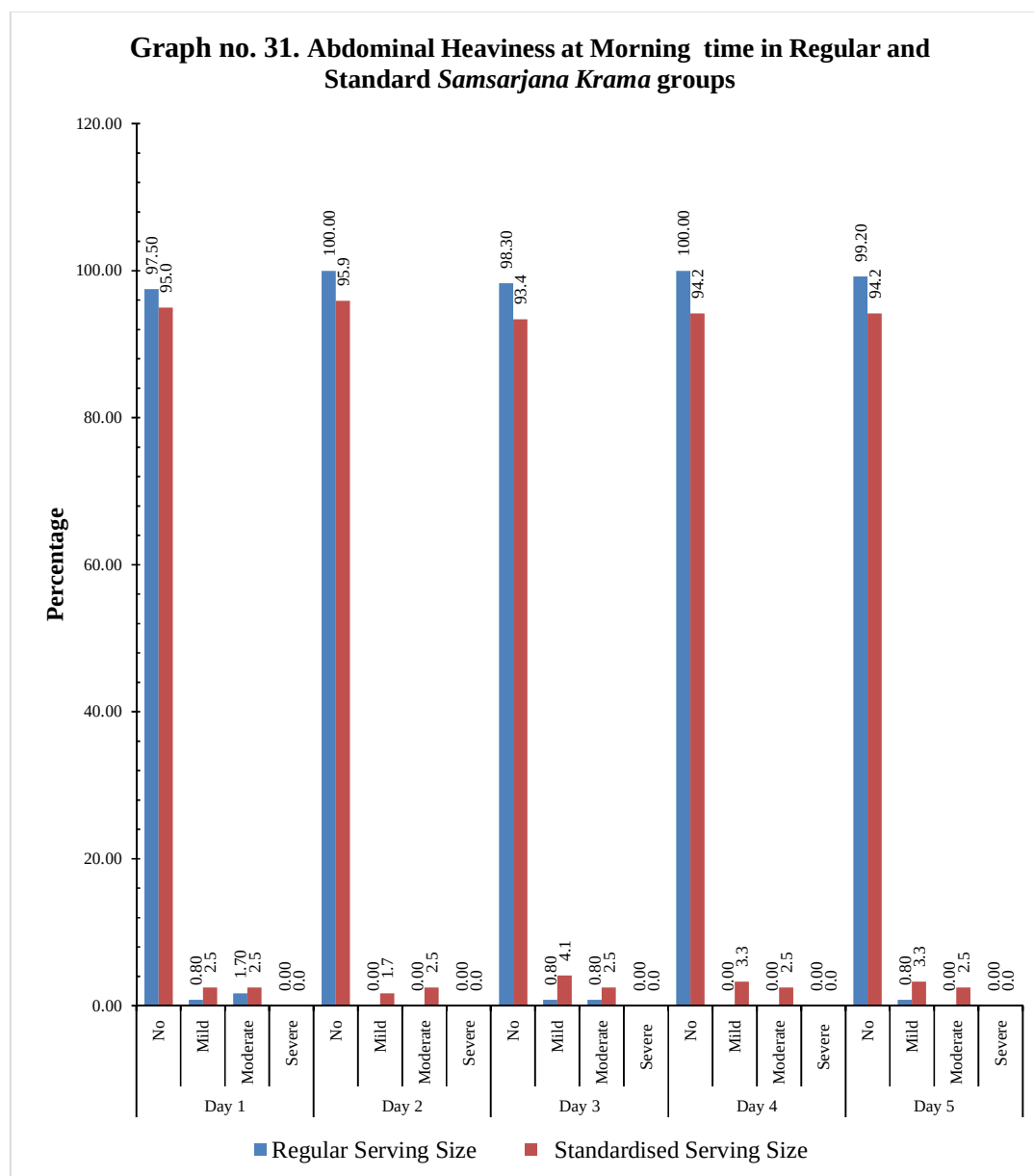


**Table No. 51. Evening Abdominal Heaviness among RSS and SSS Groups
according to Days**

Evening Abdominal Heaviness		Regular Serving Size		Standardised Serving Size	
		n	%	n	%
Day 1	No	115	95.80	108	89.3
	Mild	2	1.70	6	5.8
	Moderate	3	2.50	6	5.0
	Severe	0	0.00	0	0.0
Day 2	No	115	96.60	115	95.0
	Mild	1	0.80	2	2.5
	Moderate	4	2.50	3	2.5
	Severe	0	0.00	0	0.0
Day 3	No	116	97.50	115	95.0
	Mild	1	0.80	2	1.7
	Moderate	3	1.70	3	3.3
	Severe	0	0.00	0	0.0
Day 4	No	118	99.20	115	95.0
	Mild	2	0.80	2	2.5
	Moderate	0	0.00	3	2.5
	Severe	0	0.00	0	0.0
Day 5	No	117	98.30	112	92.6
	Mild	1	0.80	4	4.1
	Moderate	2	0.80	4	3.3
	Severe	0	0.00	0	0

In group Regular Serving at evening out of 120 subjects on Day 1, 95.80% subjects were not having Abdominal heaviness, 1.70% were having mild Abdominal heaviness, 2.50% were having Moderate Abdominal heaviness and 0.00% subjects were having severe Abdominal heaviness. Day 2, 96.60% subjects were not having Abdominal heaviness, 0.80% were having mild Abdominal heaviness, 2.50% were having Moderate Abdominal heaviness and 0.00% subjects were having severe Abdominal heaviness. Day 3, 97.50% subjects were not having Abdominal heaviness, 0.80 % were having mild Abdominal heaviness, 1.70% were having Moderate Abdominal heaviness and 0.00% subjects were having severe Abdominal heaviness. Day 4, 99.20% subjects were not having Abdominal heaviness, 0.80% were having mild Abdominal heaviness, 0.00% were having Moderate Abdominal heaviness and 0.00% subjects were having severe Abdominal heaviness. Day 5, 98.30% subjects were not having Abdominal heaviness, 0.80% were having mild Abdominal heaviness, 0.80% were having Moderate Abdominal heaviness and 0.00% subjects were having severe Abdominal heaviness.

In group Standardized Serving at evening out of 120 subjects on Day 1, 89.3% subjects were not having Abdominal heaviness, 5.8% were having mild Abdominal heaviness, 5.0% were having Moderate Abdominal heaviness and 0.00% subjects were having severe Abdominal heaviness. Day 2, 95% subjects were not having Abdominal heaviness, 2.5% were having mild Abdominal heaviness, 2.5% were having Moderate Abdominal heaviness and 0.00% subjects were having severe Abdominal heaviness. Day 3, 95 % subjects were not having Abdominal heaviness, 1.7% were having mild Abdominal heaviness, 3.3% were having Moderate Abdominal heaviness and 0.0% subjects were having severe Abdominal heaviness. Day 4, 95% subjects were not having Abdominal heaviness, 2.5% were having mild

Abdominal heaviness, 2.5% were having Moderate Abdominal heaviness and 0.0% subjects were having severe Abdominal heaviness. Day 5, 92.6% subjects were not having Abdominal heaviness, 4.1% were having mild Abdominal heaviness, 3.3% were having Moderate Abdominal heaviness and 0.0% subjects were having severe Abdominal heaviness.

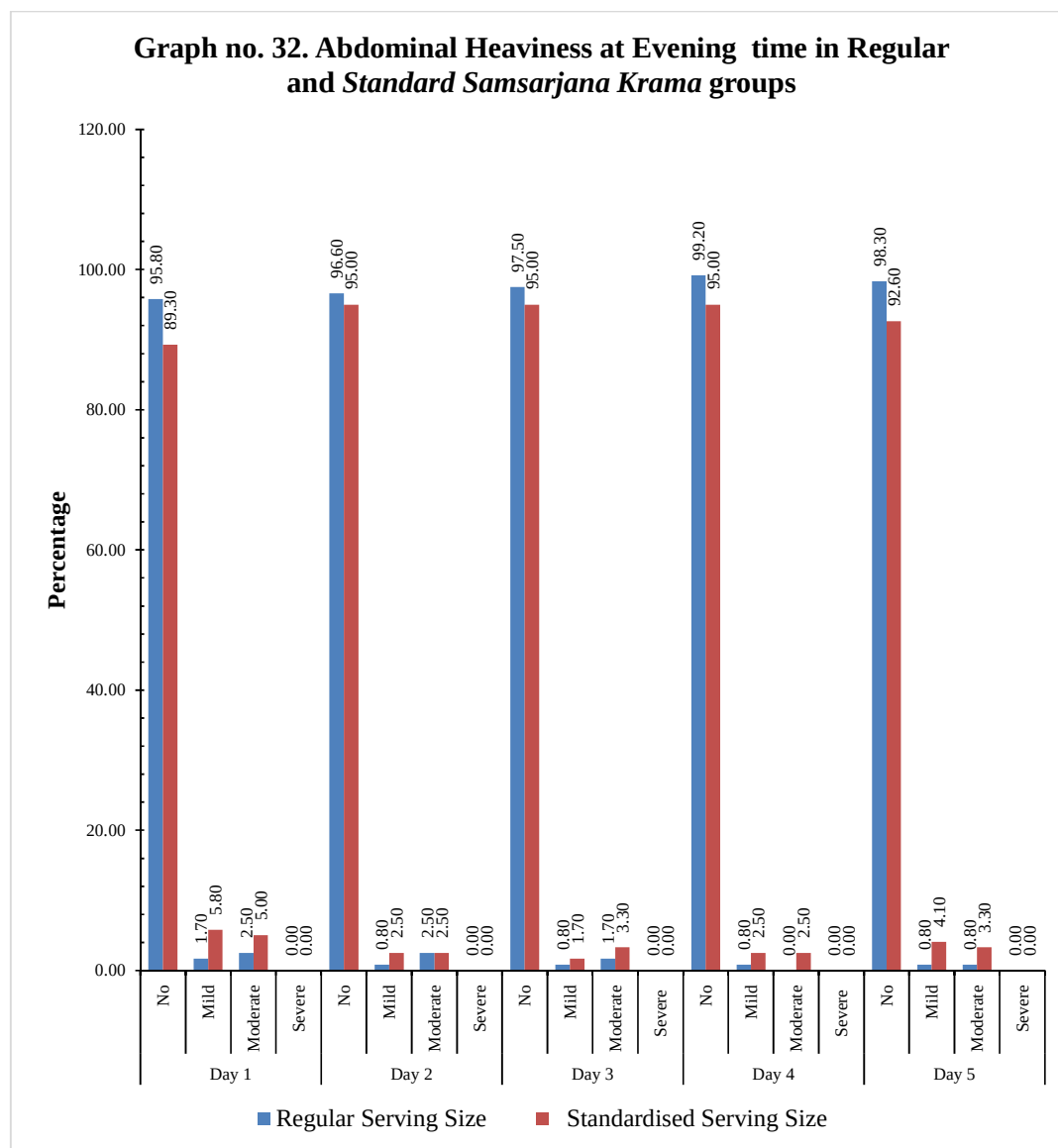


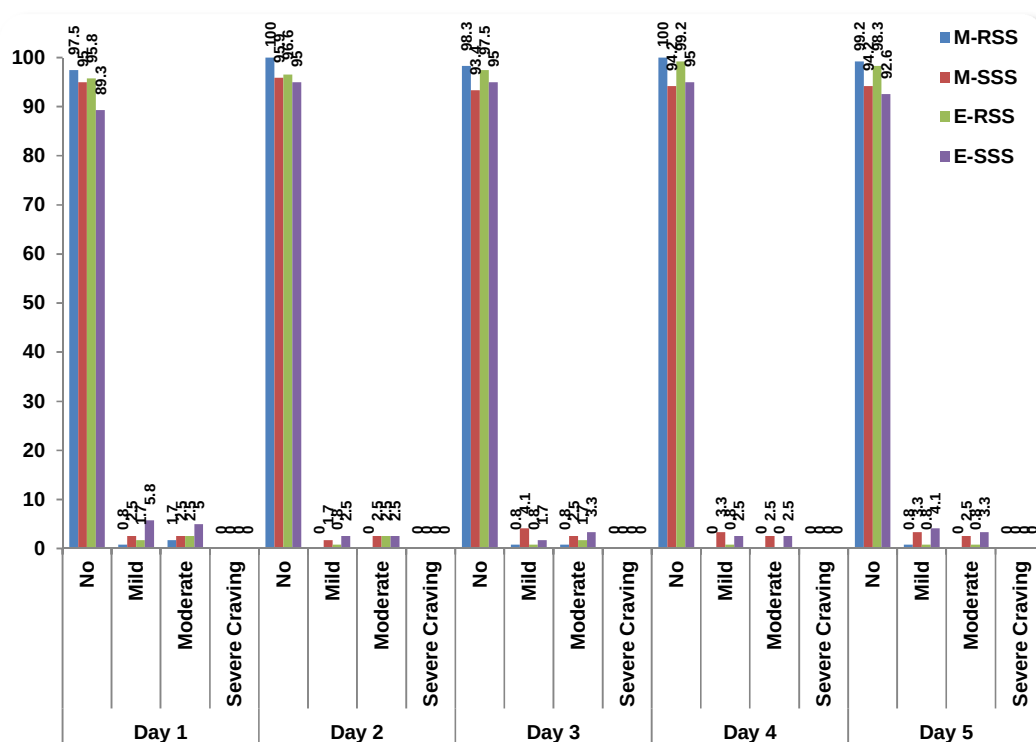
Table No. 52. Abdominal Burning Sensation in the morning and evening in RSS and SSS groups according to Days

Abdominal Heaviness		Morning		Evening	
		RSS n (%)	SSS n (%)	RSS n (%)	SSS n (%)
Day 1	No	117 (97.50)	114 (95.0)	115 (95.80)	108 (89.2)
	Mild	1 (0.80)	3 (2.5)	2 (1.70)	6 (5.4)
	Moderate	2 (1.70)	3 (2.5)	3 (2.50)	6 (5.4)
	Severe	0 (0)	0 (0)	0 (0)	0 (0)
Day 2	No	120 (100.00)	115 (95.9)	115 (96.60)	115 (95.0)
	Mild	0 (0)	2 (1.7)	1 (0.80)	2 (2.5)
	Moderate	0 (0)	3 (2.5)	4 (2.50)	3 (2.5)
	Severe	0 (0)	0 (0)	0 (0)	0 (0)
Day 3	No	118 (98.30)	112 (93.4)	116 (97.50)	115 (95.0)
	Mild	1 (0.80)	5 (4.1)	1 (0.80)	2 (1.7)
	Moderate	1 (0.80)	3 (2.5)	3 (1.70)	3 (3.3)
	Severe	0 (0)	0 (0)	0 (0)	0 (0)
Day 4	No	120 (100.00)	113 (94.2)	118 (99.20)	115 (95.0)
	Mild	0 (0)	4 (3.3)	2 (0.80)	2 (2.5)
	Moderate	0 (0)	3 (2.5)	0 (0)	3 (2.5)
	Severe	0 (0)	0 (0)	0 (0)	0 (0)
Day 5	No	119 (99.20)	113 (94.2)	117 (98.30)	112 (92.6)
	Mild	1 (0.80)	4 (3.3)	1 (0.80)	4 (4.1)
	Moderate	0 (0)	3 (2.5)	2 (0.80)	4 (3.3)
	Severe	0 (0)	0 (0)	0 (0)	0 (0)

On all days and in both times more than 93.4% of subjects showed no Abdominal Heaviness in RSS group and 89.3% in SSS group.

Graph No. 33. Showing Abdominal Heaviness in the morning and evening in

RSS and SSS Groups



DISCUSSION

The clinical study was carried out to Standardization of serving size of *Peyadi Samsarjana Krama* and its impact against regular serving size – a quasi-randomized control trial. Study design was quasi Randomized Controlled Clinical Trial. A total of 240 healthy/ill participants were recruited in the study, 120 in each group. Patients in Group 1 received Regular serving size of *Peyadi Samsarjana krama* two times per day for 5 days. Patients in Group 2 received standardized serving size of *Peyadi Samsarjana krama* two times per day for 5 days. Total 11 subjective parameters two times per day for 5 days and 3 objective parameters like FBS, PPBS and RBS were assessed on the day of *Vamana/virechana*. Before starting the main study *Deha pramana* (Body frame) and *Agni* (Digestion power) of the participants were assessed and later stadardised dose of *Peyadi Samsarjana krama* was evolved.

Discussion is elaborated under following subheadings:

- **Discussion on Observation**
- **Discussion on Results**
- **Discussion on *Samsarjana Krama*, *Agni*, *Dehapramana*, Standardization of serving size**

Discussion on Observation

➤ Gender

Females were more numerous in both groups, with 64.2% in Group 1 and 53.3% in Group 2. Overall, 58.8% of the participants were female, while 41.3% were male. This comparable distribution across sexes suggests that the gender-related

physiological and metabolic differences are evenly represented in both groups, minimizing the potential for gender bias in the study results.

➤ **Religion**

The majority of subjects recruited were from the Hindu community, with 91.7% in Group 1 and 90.8% in Group 2. This high proportion is reflective of the demographic composition of the study area, where the Hindu community is predominant.

➤ **Socio economic status**

Most participants belonged to the middle-class socio-economic group, with 89.2% in Group 1 and 87.5% in Group 2. The demographic status of the area, predominantly middle class, likely influenced this distribution. Socio-economic status can affect dietary habits, access to healthcare, and overall health, making it an important factor to consider in the interpretation of the study results.

➤ **Occupation**

Occupation-wise distribution revealed that the majority of participants were job holders (40% in Group 1 and 33.3% in Group 2), followed by housewives (27.5% in Group 1 and 24.2% in Group 2). Occupation can influence lifestyle, stress levels, and adherence to dietary regimens. The balanced distribution across different occupations in both groups ensures that occupational influences are evenly represented.

➤ **Diet**

The majority of participants had a mixed diet pattern, with 67.5% in Group 1 and 71.7% in Group 2. Dietary habits can significantly impact metabolic parameters

and overall health outcomes. The similarity in diet patterns between groups suggests that any observed differences in health outcomes are less likely to be influenced by variations in diet type

➤ **Ahara Matra**

In both groups, the majority of participants (83.3% in Group 1 and 80.8% in Group 2) had a *Madhyama Ahara Matra* (moderate quantity of food intake). This indicates a consistent pattern of food consumption, which is crucial for assessing the impact of the *Samsarjana Krama* interventions on metabolic health and the food to be consumed should be based on its consistency.⁹¹

➤ **Ahara Sevana Kala**

Most participants in both groups had three meals per day (77.5% in Group 1 and 74.2% in Group 2), which is the highest compared to those having one, two, or more than three meals per day. Regular meal frequency can influence digestive health and metabolic stability, and the similar distribution across groups helps in maintaining consistency in meal patterns. It is said in Ayurveda that, the time of signs of *Jeerna Lakshanas* can be well-thought-out for *Ahara Sevana* (food consumption).⁹²

➤ **Sleep**

The majority of participants had a sound sleep pattern, with 93.3% in Group 1 and 97.5% in Group 2. Overall, 95.4% reported sound sleep, compared to a disturbed sleep pattern. Adequate sleep is vital for metabolic health and overall well-being. The high prevalence of sound sleep in both groups indicates that sleep quality is unlikely to be a confounding factor in the study results.

➤ **Lifestyle factors**

In both groups, the majority had a sedentary lifestyle (50% in Group 1 and 45.8% in Group 2), followed by a moderate lifestyle (35.8% in Group 1 and 40.8% in Group 2). Overall, 47.9% had a sedentary lifestyle, and 38.3% had a moderate lifestyle. Epidemiological research suggests that individuals who are physically active are 30-50% less likely to develop non-communicable diseases compared to those who are sedentary and less physically active. This highlights the importance of physical activity in disease prevention and may influence the outcomes of the dietary interventions.

➤ **Ahara Shakti**

In both groups, the majority of participants had *Madhyama Ahara Shakti* (87.5% in Group 1 and 86.7% in Group 2). *Ahara Shakti*, or digestive capacity, in other words *agnipareeksha* in a patient is one of the important *pareeksha* and crucial for understanding how individuals metabolize and respond to dietary interventions.⁹³ The consistent distribution of *Madhyama Ahara Shakti* in both groups suggests that digestive capacity is unlikely to bias the results.

➤ **Koshtha**

The majority of participants in both groups had *Madhyama Koshtha* (88.3% in Group 1 and 86.7% in Group 2). Having a similar distribution of *Koshtha* types ensures that gastrointestinal responses to the *Samsarjana Krama* interventions are comparable across both groups.⁹⁴

➤ ***Dehapramana***

The majority of participants were of *Madhyama Dehapramana* (61.7% in Group 1 and 58.3% in Group 2), with 25.8% in Group 1 and 32.5% in Group 2 having *Pravara Dehapramana*. Overall, 60% were *Madhyama Dehapramana* and 29.2% were *Avara Dehapramana*. *Dehapramana*, or body constitution, is an important factor in determining metabolic and health responses. The similar distribution across groups helps ensure that body constitution does not confound the study results.

➤ ***Agni***

The majority of participants had *Samagni* (60.8% in Group 1 and 54.2% in Group 2), with *Mandagni* (20.8% in both groups) and *Teekshnagni* (18.3% in Group 1 and 25% in Group 2). Overall, 57.5% had *Samagni*, 21.7% had *Teekshnagni*, and 20.8% had *Mandagni*. *Agni*, or digestive fire, is critical for metabolism and overall health. The balanced distribution of different *Agni* types ensures that digestive capacity and metabolic responses are comparable between the groups.⁹⁵

➤ ***Prakruti Distribution***

The majority of participants had *Vata-Pitta Prakruti* (40.8% in Group 1 and 41.7% in Group 2), followed by *Pitta-Kaphaja* (35% in Group 1 and 40% in Group 2). *Prakruti*, or body constitution, influences an individual's predisposition to certain diseases and their response to treatments. The comparable distribution of *Prakruti* types across groups ensures that constitutional differences do not bias the study outcomes.

➤ **Vikruti Distribution**

In both groups, the majority of participants had *Pitta-Kaphaja Vikruti* (35.8% in Group 1 and 32.5% in Group 2), followed by *Vata-Pittaja* (25.8% in Group 1 and 30% in Group 2) and *Vata-Kaphaja* (25% in Group 1 and 25.8% in Group 2). *Vikruti* refers to the current state of imbalance in the body. The similar distribution of *Vikruti* types across groups indicates that imbalances in doshas are evenly represented, minimizing their potential impact on the study results.

➤ **Shodhana Distribution**

The majority of subjects underwent *Virechana Karma* (68.3% in Group 1 and 65.8% in Group 2), while 31.7% in Group 1 and 34.2% in Group 2 underwent *Vamana Karma*. *Shodhana*, or purification procedures, are integral to Ayurvedic treatments. The balanced distribution of these procedures across groups ensures that the type of purification does not confound the effects of the *Samsarjana Karma* interventions.

➤ **Discussion on Results**

The study aimed to evaluate the effects of different meal frequencies and serving sizes on various health parameters by comparing two groups: the RSS group or Group 1, which received only two meals per day, and the SSS group or Group 2, which received more than two meals per day with sufficient quantities which is fixed to them as per dehapramana and agni.

The results revealed significant differences in several symptoms between the two groups. Participants in the RSS group reported significantly higher levels of headaches, cravings, giddiness, vomiting, lethargy, aversion to food, and abdominal

burning compared to the SSS group. For example, the mean headache score in the RSS group was 2.51 compared to 0.54 in the SSS group ($t = 6.464$, $p < 0.001$), and the mean craving score was 6.2 in the RSS group versus 1.21 in the SSS group ($t = 11.98$, $p < 0.001$). These findings suggest that receiving only two meals per day may contribute to greater discomfort and a higher incidence of adverse symptoms, potentially due to the longer intervals between meals impacting metabolic stability and digestive health.

Conversely, no significant differences were observed for flatulence and exhaustion, indicating these symptoms may not be heavily influenced by meal frequency or serving size. Additionally, abdominal heaviness was slightly higher in the SSS group, which was unexpected and suggests other factors may influence this symptom.

The combined score analysis further highlighted the substantial difference in overall symptom burden between the groups. The RSS group had a mean combined symptom score of 26.06 compared to 8.38 in the SSS group ($t = 12.281$, $p < 0.001$). This significant disparity underscores the potential benefits of providing more frequent meals with sufficient quantities to mitigate adverse symptoms and enhance overall well-being. The findings suggest that meal frequency and portion control are crucial factors in managing health outcomes, highlighting the importance of dietary structure in therapeutic and preventive health strategies.

Discussion on glycemic parameters:

The findings of this study reveal notable differences in blood glucose levels between the Standardized Serving Size (SSS) group and the Regular Serving Size

(RSS) group, highlighting the impact of personalized dietary regimens in *Samsarjana Krama* on metabolic parameters.

Fasting Blood Glucose (FBS) Levels

The FBS levels in the SSS group were observed to be higher ($B = 1.44$) compared to the RSS group. This increase, although not statistically significant, suggests that the standardized serving size might influence fasting glucose levels. One possible explanation is that the SSS group's dietary regimen, tailored to individual body frames and digestive capacities, might lead to better metabolic control and stability, resulting in slightly elevated FBS levels. This could be an adaptive response of the body to a more regulated and consistent dietary intake.

Random Blood Glucose (RBS) Levels

The most significant finding of this study is the substantial increase in RBS levels in the SSS group, with a mean difference of 4.37 units ($B = 4.37$, $p < 0.05$) compared to the RSS group. This significant elevation in RBS indicates that the standardized serving size of *Samsarjana Krama* has a pronounced effect on postprandial glucose levels. Several factors could contribute to this observation:

1. **Increased Caloric Intake:** The SSS group may have consumed a higher caloric intake due to the standardized portions designed to meet specific body frames and digestive capacities, leading to higher postprandial glucose levels.
2. **Improved Digestive Efficiency:** Tailoring the diet to individual *Agni Bala* (digestive capacity) could have enhanced the digestive efficiency in the SSS group, resulting in more efficient nutrient absorption and subsequently higher blood glucose levels post-meal.

3. **Adaptive Metabolic Response:** The body's metabolic response to the tailored diet might involve a temporary increase in blood glucose levels as it adjusts to the new dietary regimen. This adaptation could signify improved overall metabolic function and energy utilization.

Implications for *Samsarjana Krama*

The significant change in RBS due to the standardized serving size of *Samsarjana Krama* underscores the importance of individualized dietary regimens in post-detoxification therapy. The results suggest that customizing serving sizes based on *Deha Pramana* (body frame) and *Agni Bala* can lead to marked differences in metabolic outcomes. This has important implications for the clinical practice of Ayurveda, as it highlights the need for personalized dietary plans to optimize therapeutic benefits and minimize potential adverse effects.

Samsarjana Krama is a carefully structured dietary regimen recommended after undergoing *Vamana* (therapeutic vomiting) and *Virechana Karma* (therapeutic purgation) as part of *Panchakarma* treatment. This transitional diet is crucial for restoring the body's digestive strength and metabolic capacity, which are often compromised following these intense detoxification procedures.⁹⁶

The primary objective of *Samsarjana Krama* is to support the recovery of *Agni* (digestive fire) and to facilitate the proper digestion of food. This method ensures a gradual reintroduction of food, beginning with easily digestible items like *Peya* (rice gruel) and progressing to more substantial foods like *Vilepi* (softened rice), *Akritayusha*, *Kritayusha*, *Akrita mamsarasa* and eventually, *Kritamamsa Rasa*. This sequential approach helps in preventing the overstimulation of the digestive system, thereby avoiding conditions such as gastritis and ulcers.

The dietary regimen is tailored based on the level of purification achieved, classified into *Jaghanya*, *Madhyama*, and *Avara Shuddhi*. The number of meals and the type of food consumed are adjusted according to the individual's needs, aiming to gradually increase the digestive fire and the body's absorptive capacity.

Nutritionally, the foods recommended in *Samsarjana Krama* are rich in essential nutrients and designed to provide the necessary energy while accommodating the body's reduced digestive capacity post-*Panchakarma*. The inclusion of easily digestible carbohydrates, proteins, and fats ensures that the body's nutritional requirements are met without burdening the digestive system. The balanced intake of cereals and pulses helps in maintaining an optimal essential amino acid profile, which is crucial for the body's overall health and well-being.

During the *Samsarjana Krama* process, a gradual increase in postprandial (after-meal) and random blood sugar levels was observed, which remained within normal limits. This indicates that the body's metabolic response to the reintroduced food is balanced and effective. Additionally, fasting blood sugar levels were maintained within normal ranges, suggesting efficient energy conservation by the body.

The structured and gradual approach of *Samsarjana Krama* not only aids in the recovery of the digestive system but also ensures that the body transitions smoothly from a state of detoxification to normal dietary patterns. This method highlights the importance of personalized nutrition in Ayurvedic practices, emphasizing the need for careful management of diet to optimize health outcomes post-*Panchakarma*.

Discussion on Headache

On Day 1, in RSS group, morning, 58% and day 5, 44.5% experienced mild head ache whereas maximum 4.1% mild Headache in SSS Group on day 5. While in the evening time, in RSS group, 9.2% reported an moderate headache. In SSS group on day 1, maximum of 3.3% had head ache in the evening.

Significance: The RSS group reported a significantly higher mean headache score (2.51) compared to the SSS group (0.54), with a t value of 6.464 and a p value of <0.001. This suggests that consuming only two meals per day may lead to prolonged fasting periods, potentially causing hypoglycemia or dehydration, both of which are known triggers for headaches. The structured meal frequency in the SSS group likely helps maintain stable blood sugar levels and hydration, thereby reducing the occurrence of headaches.

Discussion on Hunger/Cravings

In RSS group at morning, on 4 and 5 had 43.7% and 45.4% with severe Hunger and on day one in the evening 47.1% showed severe hunger/cravings. Whereas over 90% of the SSS group had no complaints and hunger is maintained.

Significance: Cravings were significantly higher in the RSS group (mean of 6.2) compared to the SSS group (mean of 1.21), with a t value of 11.98 and a p value of <0.001. The longer intervals between meals in the RSS group could lead to increased hunger and cravings due to fluctuations in blood sugar levels and the body's increased demand for nutrients to compensate for the prolonged fasting periods.

Discussion on Flatulence

In RSS group on all days in the morning and evening hours, 0.8 to 6.7% of subjects showed mild flatulence. In SSS group on day 1, in the evening 7.4% subjects showed the mild flatulence which was highest, this may be due to increased quantity of starch in rice.

Non-significance: The mean flatulence scores were similar between the RSS (0.95) and SSS (0.82) groups, with a t value of 0.418 and a p value of 0.676. This indicates that the frequency and quantity of meals did not significantly impact flatulence. Flatulence is often more influenced by the type of food consumed (e.g., high-fibre or gas-producing foods) rather than meal frequency or portion size.

Discussion on Giddiness

Mild giddiness was reported by 44.5% in the RSS group at morning on day 1 and 43.7% in the evening on day 3 & 5. These readings were significantly higher than the readings of other days.

Significance: The RSS group experienced significantly more giddiness (mean of 1.56) compared to none in the SSS group, with a t value of 9.686 and a p value of <0.001. Giddiness can result from prolonged periods without food, leading to hypoglycemia and low energy levels. The regular intake in the SSS group helps maintain steady glucose levels, preventing giddiness.

Discussion on Vomiting

On all days and in both groups more than 97.5% of subjects not having vomiting. On day 5 both in the morning and evening 2.50% showed 1-2 episodes of

vomiting in RSS group, which was 0.8% in SSS Group in the evening time on day 1, 3 & 5.

Significance: The mean vomiting score was significantly higher in the RSS group (1.78) compared to the SSS group (0.03), with a t value of 9.71 and a p value of <0.001. Extended fasting periods in the RSS group could cause gastric discomfort or acid build-up, leading to vomiting. The more frequent meals in the SSS group help to neutralize stomach acid and prevent such issues.

Discussion on Distaste

In group RSS, On day two in the morning 43.7% mild and in SSS group 18.2% showed moderate distaste on day 1 in the morning hours. Whereas in the evening in RSS group. 10.9% with moderate distaste on day 1 and 3 in the morning hours, 44.5% with mild and 9.2% moderate distaste on day 5 & in SSS group 9.16% mild on day 1 and 17.5% moderate on day 5 in the evening time.

Significance: Distaste was significantly higher in the RSS group (mean of 2.61) compared to the SSS group (mean of 1.89), with a t value of 2.392 and a p value of 0.018. Prolonged fasting can lead to nausea and distaste due to increased gastric acid and digestive issues, while regular meals can help maintain normal digestive processes.

Discussion on Lethargy

In the morning of days 1 and 4 in the RSS group, 44.5% and 45.5% were suffered with moderate lethargy, while in the second group, over 91.7% were not lethargic on all 5 days. In the evening of day 5, 47.9% in the first group experienced

lethargy, whereas in the second group, 73.6% to 96.7% were free from lethargy on all 5 days.

Significance: Lethargy scores were significantly higher in the RSS group (mean of 4.06) compared to the SSS group (mean of 1.08), with a t value of 8.266 and a p value of <0.001 . Longer gaps between meals can lead to reduced energy levels and increased fatigue, whereas regular meals help maintain consistent energy levels throughout the day.

Discussion on Aversion to food

In the RSS group on day 1, 42.0% in the morning and on day 4, 44.50% in the evening were found with severe aversion to food. While in the RSS group, evening time day 1, 10.10% each found for mild and moderate Aversion to food, on day 1, 6.6% were found with mild aversion to food 6.6% was maximum in the evening for SSS Group.

Significance: The RSS group reported significantly higher aversion to food (mean of 4.18) compared to the SSS group (mean of 1.34), with a t value of 9.865 and a p value of <0.001 . The irregular meal patterns in the RSS group might cause digestive discomfort, leading to a decreased desire to eat. Regular meals can help in maintaining a healthy appetite and reducing aversion.

Discussion on Exhaustion

On all days and in both groups more than 95% of subjects showed no Exhaustion.

Non-significance: Exhaustion scores were low and similar in both groups (RSS mean of 0.27 and SSS mean of 0.2), with a t value of 0.493 and a p value of 0.622. This

suggests that exhaustion is influenced by factors other than meal frequency and portion size, such as overall sleep quality, physical activity, and individual health conditions.

Discussion on abdominal burning sensation

In RSS group, 44.5% on day1 and 42% on day 4 were found with mild abdominal burning sensation, whereas in SSS group between 91-97.5% were free from abdominal burning sensation on all 5 days.

Significance: Abdominal burning was significantly higher in the RSS group (mean of 1.68) compared to the SSS group (mean of 0.38), with a t value of 4.218 and a p value of <0.001. Longer fasting periods can increase gastric acid production, leading to abdominal burning. Regular meals help buffer stomach acid and reduce the incidence of this symptom.

Discussion on Abdominal Heaviness

On all days and in both times more than 93.4% of subjects showed no Abdominal Heaviness in RSS group and 89.3% in SSS group.

Significance: Interestingly, the SSS group reported higher abdominal heaviness (mean of 0.9) compared to the RSS group (mean of 0.28), with a t value of -1.998 and a p value of 0.048. This could be due to the larger volume of food consumed at each meal in the SSS group, leading to a sensation of heaviness. The smaller, less frequent meals in the RSS group might not cause the same level of abdominal distension.

Overall Discussion on results:

Headache, giddiness, flatulence, etc. are most common findings observed during the *samsarjana karma* diet due to two meals practice in all Ayurveda hospitals.

There is no standard serving sizes considering the patient's *Deha Pramana* (physical constitution) and *Agni* (digestive power). Hence there is a need for standardization of serving size and which was the important work done in this study.

Headache, Craving, Giddiness, Lethargy, Vomiting, Distaste, Aversion to food, Abdominal Burning, Exhaustion for all these parameters RSS group reported a significantly higher mean compared to the SSS group, with a 'p' value of <0.001. This suggests that consuming only two meals per day, may lead to prolonged fasting periods leads to hypoglycaemia or dehydration. The Standardized serving size in the SSS group likely helps maintain stable blood sugar levels and hydration, thereby reducing the symptoms. As per Ayurveda due to long gap between two meals leads to *pitta* and *vata prakopa* which leads to headache. *Yogaratanakara* states that one should not take *ahara* within 1 *yama* of consumption of food as it leads to *Ama*, and one should not *langhana* for more than 2 *yama* as it leads to *bala Kshaya*.⁹⁷ *Yogaratanakara* states that one should not take food within 3 hours of consumption of food as it leads to *Ama*, and one should not fast for more than 6 hours as it leads to loss of strength.⁹⁸

Flatulence, heaviness in abdomen: The frequency and quantity of meals did not significantly impact flatulence. This may be due to starch in the rice and larger volume of food consumed at each meal, leading to a sensation of heaviness, in the SSS group. This was not seen in the RSS group because of smaller & less quantity of meals.

The differences in symptoms between the RSS and SSS groups highlight the impact of meal frequency and portion size on various health parameters. Regular and sufficiently portioned meals (SSS) stabilize metabolic processes, reducing symptoms like headaches, cravings, giddiness, vomiting, lethargy, aversion to food, and

abdominal burning. In contrast, limited meal frequency (RSS) leads to prolonged fasting periods, contributing to adverse symptoms. The exceptions, such as flatulence and exhaustion, suggest that these symptoms are influenced by other factors beyond meal frequency and portion size.

The combined score analysis further highlighted the substantial difference in overall symptoms between the groups. The RSS group had a mean combined symptom score of 26.06 compared to 8.38 in the SSS group ($t = 12.281$, $p < 0.001$). This significant difference highlights the potential benefits of providing more frequent meals with sufficient quantities to mitigate adverse symptoms and enhance overall well-being. The findings suggest that meal frequency and portion control are crucial factors in managing health outcomes, highlighting the importance of dietary structure in therapeutic and preventive health strategies.

Discussion on *Samsarjana Krama*

Post *Vamana/Virecha karma*, there will be derangement of *agni* (digestive power) and hence the specific method of diet menu is adopted till the optimal digestion sets and hence *Samsarjana Krama* is to be followed.

Discussion on Nutritional supplementation:

Suresh K. et, al, A mild drop in blood sugar levels can occur if meals delayed too long and can cause symptoms such as Giddiness, weakness, head ache and this was observed in RSS group. The study shows minimal increase in the FBS and RBS in SSS group and this could be because of increased portion of meals and increased serving sizes in comparison with the RSS group. The main source of energy in *Samsarjana krama* is Carbohydrate, Proteins and fats. M. B. Hall et. al, carbohydrates and fats were valued on their caloric contributions.⁹⁹

Deha Pramana (Body Frame) Assessment tool

The development and validation of the *Deha Pramana* Assessment tool aimed to provide a more objective and standardized method for assessing body constitution in Ayurveda. The tool was validated by comparing its scores with traditional methods used by Ayurveda clinicians. Thirty healthy participants were assessed, including those with variations in height, weight, and digestive fire (agni). The study involved two Ayurveda experts who used both traditional methods and the new assessment tool. The results showed a positive correlation between the traditional method and the tool's scores, indicating that the tool accurately reflects traditional assessments. Specifically, the traditional assessment of *Avara*, *Madhyama*, and *Pravara Deha Pramana* corresponded to score ranges of 4-6, 7-10, and 11-12 on the tool, respectively. These cutoff scores were used for further assessments in the study. The *Deha Pramana Assessment* tool offers advantages such as a structured, objective evaluation, which enhances the reliability and reproducibility of body constitution assessments in *Ayurveda*. This tool can potentially streamline and standardize the assessment process, making it more accessible and less subjective.

Standardization of serving size of Peyadi Samsarjana Krama

This study was focused on the standardization of serving sizes for *Peya*, *Vilepi*, *Akrita Yusha (AK)*, *Kruta Yusha*, *Akruta Soya Yusha*, and *Kruta Soya Yusha* based on *Deha Pramana* (body constitution) and *Agni bala* (digestive fire). It was done by screening 81 subjects were categorized into three groups, in which 10 were of *Avara Deha Pramana*, 50 were of *Madhyama Deha Pramana* and 21 *Pravara Deha Pramana*. Each further divided based on their digestive fire into *Sama Agni* (balanced digestion), *Manda Agni* (slow digestion), and *Teekshna Agni* (fast digestion). The average, minimum, and maximum serving sizes were calculated for each category

based on their consumption patterns. The standardized dose was calculated on the bases of *snehapana* dosage and its digestion.

Avara Dehapramana (small body frame):

- *Peya*: 701.2 ml (Min: 564.7 ml, Max: 800 ml)
- *Vilepi*: 592.1 ml (Min: 428 ml, Max: 666.6 ml)
- *Akrita Yusha* (AK): 171.2 ml (Min: 165 ml, Max: 177.8 ml)
- *Krita Yusha*: 474.5 ml (Min: 400 ml, Max: 600 ml)
- *Akrita Soya Yusha*: 158.34 ml (Min: 147 ml, Max: 172 ml)
- *Krita Soya Yusha*: 404.2 ml (Min: 384 ml, Max: 436 ml)

Madhyama Dehapramana (medium body frame):

- *Peya*: 932.22 ml (Min: 918 ml, Max: 1200 ml)
- *Vilepi*: 669.9 ml (Min: 600 ml, Max: 750 ml)
- *Akrita Yusha* (AK): 188.8 ml (Min: 171.4 ml, Max: 208.7 ml)
- *Krita Yusha*: 526.6 ml (Min: 480 ml, Max: 600 ml)
- *Akrita Soya Yusha*: 174.35 ml (Min: 162 ml, Max: 200 ml)
- *Krita Soya Yusha*: 478.2 ml (Min: 400 ml, Max: 533 ml)

Pravara Dehapramana (large body frame):

- *Peya*: 1128.2 ml (Min: 1010 ml, Max: 1200 ml)
- *Vilepi*: 842.07 ml (Min: 750 ml, Max: 1091 ml)
- *Akrita Yusha* (AK): 199.86 ml (Min: 188 ml, Max: 218 ml)
- *Krita Yusha*: 576.1 ml (Min: 539 ml, Max: 800 ml)
- *Akrita Soya Yusha*: 193.4 ml (Min: 173 ml, Max: 218 ml)
- *Krita Soya Yusha*: 528.9 ml (Min: 480 ml, Max: 564 ml)

The results indicate that individuals with a larger body frame (*Pravara Dehapramana*) consume larger quantities of all types of *Samsarjana Krama* diets compared to those with medium (*Madhyama*) and small (*Avara*) body frames. This is consistent with the greater nutritional needs of individuals with larger body frames. Similarly, the variations in serving sizes based on digestive fire types further underscore the importance of personalized dietary recommendations in Ayurveda.

The study successfully established average, minimum, and maximum serving sizes for different body constitutions, providing a standardized guideline that can help intailoring dietary interventions to individual needs based on *Deha Pramana* and *Agni*. This standardization can improve the accuracy and effectiveness of dietary prescriptions in Ayurvedic practice, ensuring that individuals receive appropriate portions that align with their body constitution and digestive capacity.

Discussion on Jeerna ahara laxana:

The *Jeerna Ahara Laxana* assessment is a crucial tool in administering the *Samsarjana Krama* dietary regimen effectively. This assessment involves providing participants with a checklist to ensure they recognize the signs of well-digested food before consuming their next meal. By adhering to these guidelines, participants can consume the serving size at the proper time, facilitating the accurate calculation of the standard dose of *Peyadi Samsarjana Krama*.

The *Peyadi Samsarjana Krama* is a graduated diet plan initiated after *Vamana* (therapeutic vomiting) and *Virechana Karma* (therapeutic purgation) as part of *Panchakarma* treatments. The primary goal is to restore digestive strength and overall balance. By monitoring *Jeerna Ahara Laxana*, which includes signs like *Udgarashudhi* (clear belching), *Utsaha* (Enthusiasm), *Vegotsargayatochita* (proper

evacuation of bowels), Laghuta (feeling of lightness), Kshut (proper hunger), Pipasa (proper thirst) participants ensure that their digestive systems are ready for the next intake of food.¹⁰²

This method allows for a personalized approach to the dietary regimen, as each individual's digestive capacity can vary. By following the checklist, practitioners can adjust the serving sizes and intervals, ensuring that the transition from detoxification to a normal diet is smooth and gradual. This reduces the risk of indigestion or other digestive complications, promoting better health outcomes.

In summary, the *Jeerna Ahara Laxana* assessment is an essential component in the effective implementation of *Samsarjana Krama*. It ensures that participants consume their meals at the appropriate times, allowing for the standardization of the *Peyadi Samsarjana Krama* dose. This approach not only enhances the digestive process but also supports the overall therapeutic benefits of *Panchakarma* treatments.

Frequency of serving:

Frequent deviation in meal timing over a prolonged period and empty stomach leads to increased Acid levels leading to symptoms like headaches, giddiness, exhaustion, lethargy, Craving for food, vomiting and abdominal burning sensation and potentially causing epigastric burning.¹⁰⁰ these complaints commonly seen in RSS group because of prolonged gap between two serving timings and seen less in SSS Group because of more than 2 and sufficient quantity of meal.

CONCLUSION

- The serving size of *Peyadi Samsarjana Krama* in accordance with *Deha Pramana* (Body frame) & *Agni Bala* (Digestive capacity) can be standardised.
- The standardized serving size of *Samsarjana krama* overcomes the problems like headache, giddiness, lethargy etc. faced in Regular serving size group.
- Standardized serving size of *Samsarjana krama* can be adopted in Post *Panchakarma* treatment.
- Flatulence and exhaustion are not be heavily influenced by meal frequency or serving size.
- In conclusion, the differences in symptoms between the RSS and SSS groups highlight the impact of meal frequency and portion size on various health parameters. Regular and sufficiently portioned meals (SSS) tend to stabilize metabolic processes, reducing symptoms like headaches, cravings, giddiness, vomiting, lethargy, aversion to food, and abdominal burning. In contrast, limited meal frequency (RSS) leads to prolonged fasting periods, contributing to adverse symptoms. The exceptions, such as flatulence and exhaustion, suggest that these symptoms are influenced by other factors beyond meal frequency and portion size.

FUTURE RESEARCH

- **Multi-Centric Clinical Trials:** Conducting multi-centric clinical trials can help validate the standardized serving size of the *Samsarjana* diet.
- **Focus on Single Diet Interventions:** *Samsarjana Karma* consists of six different dietary interventions, future studies should focus on standardizing individual components such as *Peya* or *Vilepi*, *Akrita* or *Krita usha*, *Akrita* or *Krita mamsa Rasa* or *soya Yusha*. This approach can provide more precise insights and easier implementation.
- **Targeted Studies on Specific *Deha Pramana*:** Future research can be designed to focus on a single body frame (*Deha Pramana*) and a single *Samsarjana* diet. This targeted approach will help to understand the specific dietary needs and optimize the *Samsarjana* regimen for each body type.

LIMITATION OF THE STUDY

It is challenging to find individuals with *Avara Deha Pramana* (small body frame) who have *Samagni* (balanced digestion), *Mandagni* (slow digestion), and *Tikshnagni* (fast digestion) for the standardization of the *Samsarjana* diet.

- Participants may exhibit poor acceptance of the *Samsarjana* diet due to their ingrained traditional dietary habits, making it difficult to adhere to the prescribed regimen.
- There is a significant risk of participants deviating from the *Samsarjana* diet due to cravings for familiar foods, leading to inconsistencies in data and reduced efficacy of the regimen.
- Ensuring strict compliance with the *Samsarjana* diet requires continuous monitoring and supervision.

SCOPE FOR THE FURTHER RESEARCH

1. **Multi-Centric Clinical Trials:** Conducting multi-centric clinical trials can help validate the standardized serving size of the *Samsarjana* diet.
2. **Focus on Single Diet Interventions:** *Samsarjana Karma* consists of six different dietary interventions, future studies should focus on standardizing individual components such as *Peya* or *Vilepi*, *Akrita* or *Krita usha*, *Akrita* or *Kruta mamsa Rasa* or *soya Yusha*. This approach can provide more precise insights and easier implementation.
3. **Targeted Studies on Specific *Deha Pramana*:** Future research can be designed to focus on a single body frame (*Deha Pramana*) and a single *Samsarjana* diet. This targeted approach will help to understand the specific dietary needs and optimize the *Samsarjana* regimen for each body type.

SUMMARY

The dissertation entitled “Standardisation of serving size of *Peyadi Samsarjana Krama* and its impact against regular serving size – a quasi randomised control trial” comprises of following:

Introduction: It comprised of description of *Samsarjana Krama*, its importance post *vamana* and *virechana*, *Jeernahara lakshanas*, and *Peyadi* preparation methods. *Dehapramana* and *agni* assessment method, Further the need of standardization of serving size of *Samsarjana Krama* in present day, how it is different than regular traditional method of *samsarjana karma* to reduce the complications.

Objective: The objective is to standardize the serving size of *Peyadi Samsarjana Krama* in accordance with *Deha Pramana* (Body frame) & *Agni Bala* (Digestive capacity) and to evaluate the effect of standardised serving size of *Peyadi Sansarjana Krama* against regular serving size

Review of Literature: Under review of literature, detailed review on *Samsarjana Krama*, recent reviews on *pathya kalpana* day wise *peyadi samsarjana karma* and *their preparation method*, Nutrients of *Samsarjana* are explained in detaoil. It also includes detail explanation of *Vamana*, *virechana*, evaluation of *jeernahara lakshanas*, types of *shudhis* in *vamana* and *virechana* and number of *vegas*, *agni* and its importance and types, metabolism of carbohydrate, protein, lipids, fats are explained. In drug review *shala* (rice), *mudga* (Green Gram), *mamsa*, meat, soya, *saindhava* are included.

Materials and Methods: Methodology is described under 2 headings: Standardization of *samsarjan krama*, this includes *Dehapramana* assessment, *agni* assessment, Method of Standardization of *Samasrjana Krama*, *Samsarjana* regimen

with quantity and time of serving, Preparation of *Peyadi Samsarjana Krama*. Under the clinical study part, data collection methods, inclusion criteria, exclusion criteria, subjective and objective assessment parameters, intervention details.

Observation: Demographic variables such as Age, gender, religion, education, occupation, socioeconomic status, marital status, *Ahara Matra*, *Shodhana* treatment Undergone (Vamana/virechana), *Ahara sevana kala*, *Agni*, appetite, sleep, *prakrati*, *saara* variables were compared between the two groups.

Results: The outcome of subjective parameters like Head Ache, Craving for food, Flatulence, Giddiness, Vomiting, Distaste, Lethargy, Aversion to food, Presence or absence of exhaustion, Abdominal burning sensation, Abdominal heaviness and Objective Criteria like Blood Glucose level Fasting Blood Glucose, Post Prandial Blood Glucose and Random Blood Glucose tests thrice on the day of *vamana* and *virechana* were explained.

Discussion: Under this discussion, observation and results were mentioned with reasons and critically appraised the results.

Conclusion: The serving size of *Peyadi Samsarjana Krama* can be standardised. The standardized serving size of *Samsarjana krama* overcome the complications faced in Regular serving size group. Standardized serving size of *Samsarjana krama* can be adopted in Post *Panchakarma* treatment.

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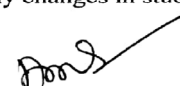
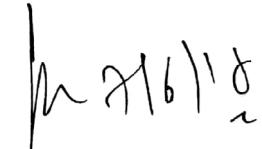
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ANNEXURES**ANNEXURE I: ETHICAL CLEARANCE LETTER**

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Ref.No.KAHER/Ethic/2018-19/D- 122 To, Dr. Sandeep S Sagare Ph.D. Part-Time Research Scholar, 2017-18 Batch, Faculty of Ayurveda, KAHER, Belagavi	29 th May 2018
Dear Research Scholar, Sub:- Regarding Ethical Clearance.	
The KLE University Ethics Committee on Human Subjects for Ph. D Research Project met on Thursday, 19th April 2018 to consider your application for approval of the research project "Standardization of serving size of Peyadi Samsarjana Krama and its impact against regular serving size - a quasi randomised control trial."	
As there are no ethical issues involved in your proposed research project, the Committee has provided approval for this research project.	
You are requested to report to Ethical Committee in case of the following:	
1. Any deviation from or change of the protocol. 2. All serious adverse events. 3. Any changes in study documents.	
 (Dr. Anita Dalal) Member Secretary, Ph.D. Ethical Committee (Human), KAHER, Belagavi	 (Dr. Anil Hogade) Chairman Ph.D. Ethical Committee (Human), KAHER, Belagavi.
CC to: - The Director Academic Affairs, KAHER, Belagavi. - The Director Research Foundation, KAHER, Belagavi. - The Registrar, KAHER, Belagavi	



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☎: 0831-2444444

FAX: 0831-2493777

Web: <http://www.kledeemeduniversity.edu.in>

E-mail: info@kledeemeduniversity.edu.in

Ref. No. KAHER/AA/23-24/D-134-2

2nd June 2023

Ph.D. PROGRAM

Evaluation of Six Monthly Reports submitted by the Candidate

Name of the Ph.D Scholar : Dr. Santosh F. Patil

Name of the Guide : Dr. Suhaskumar Shetty, Principal,
Shri. B. M. K. Ayurveda Mahavidyalaya, Belagavi

Dr. Poornachandra Tejeswi S, Hubballi- Coguide

Batch/Category/Faculty : 2018 / Part-Time / Ayurveda

Topic : Evaluation of Jeevanthyadi Ghrita Matra Basti on
Chemo-radiation induced adverse events in Cancer patients.

Report	Excellent	Good	Satisfactory	Poor
I			✓	
II			✓	
III			✓	
IV			✓	
V			✓	
VI			✓	
VII			✓	
VIII		✓		
IX			✓	

Note: Only when three reports are satisfactory and if the candidate has published articles as per rules then only the candidate is permitted to present second Open house seminar followed by submission of thesis



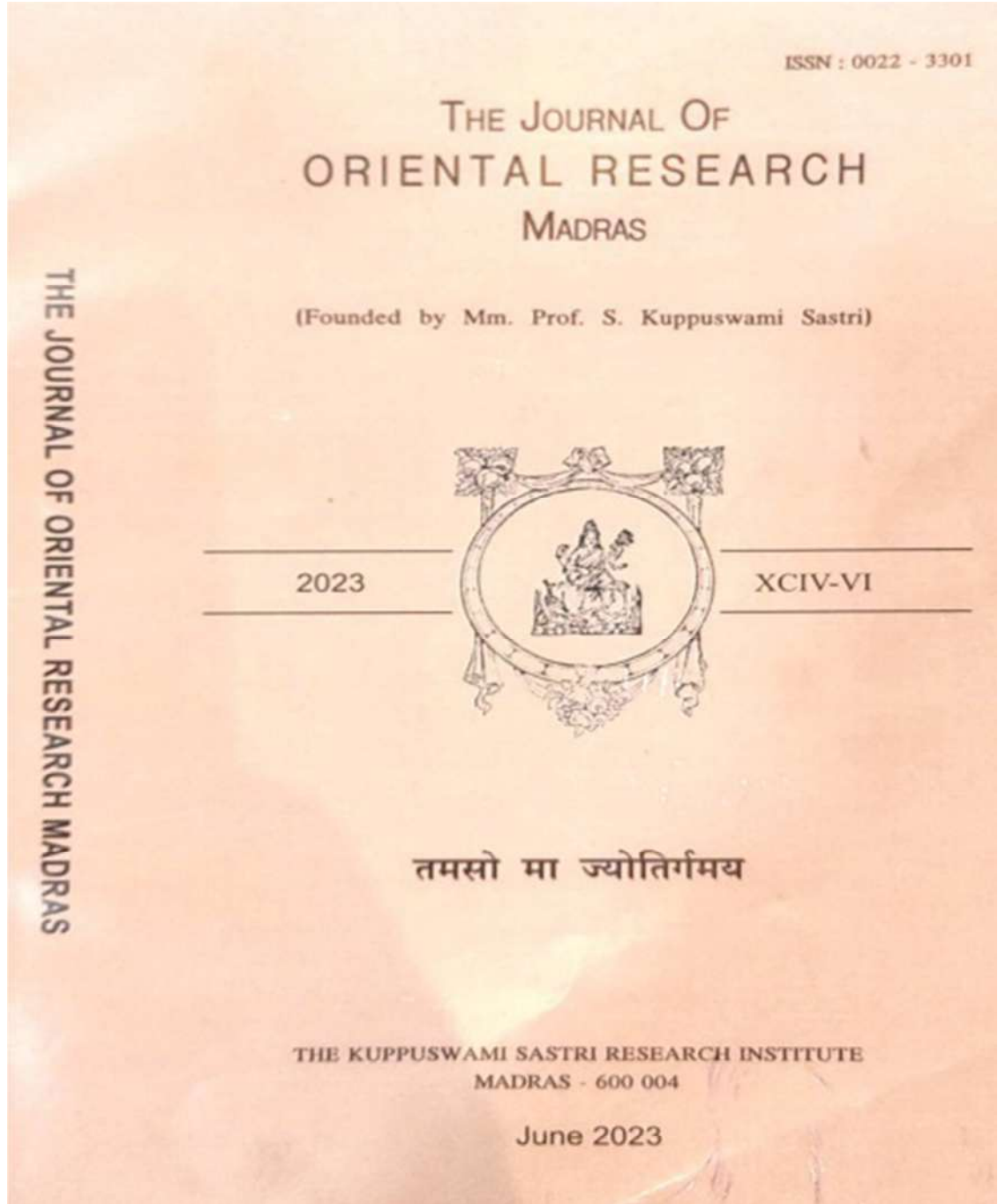
(Dr. Roopa M. Bellad)
Director, Academic Affairs

Cc to :

Dr. Suhaskumar Shetty, Principal, Shri. B. M. K. Ayurveda Mahavidyalaya, Belagavi -Guide
Dr. Poornachandra Tejeswi S, Hubballi - Coguide

NB: Research scholars are hereby informed in future to strictly enclose the source of documents to review half yearly reports.

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TITLE: STANDARDIZATION OF SERVING SIZE OF PEYADI SAMSAJRANA KRAMA*

BY

Dr. Sandeep S Sagare, **Dr. B S Prasad, ***Dr. Ashok Patil**PhD Scholar & Reader Dept of Swasthavritta and Yoga KAHER's Shri B M Kankanawadi****Ayurved Mahavidyalay Shahpur Belagavi (1st Author)******President Board of Ayurveda NCISM Delhi (2nd Author)*******Guide-Prof & HoD Dept of Swasthavritta and Yoga KAHER's Shri B M Kankanawadi Ayurved****Mahavidyalay Shahpur Belagavi (3rd Author)****Abstract:**

Panchakarma is the specialised traditional treatment modality and ancient purificatory procedure of the whole body of the human and it is basically designed to detoxify the body. Among *Panchakarmas*, therapeutic emesis procedure (*Vamana*) and therapeutic purgation procedure (*Virechana*) are widely used therapies. Certain diet regimen is to be followed after these two procedures and which is named as *samsarjana karma*. This diet procedure is specifically meant for slow acclimatization of the subject from empty stomach to normal diet and thus to restore the normal digestion power (*agni bala*). *Samsarjana* diet includes two meals per day and this only two meals per day is creating complaints in patients or healthy subjects, like head ache, abdominal distension, giddiness, epigastric burning and many more. To overcome these complaints, this study named Standardization of serving size of *Peyadi Samsarjana Krama* is planned.

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* Correspondence Author: Dr. Sandeep S Sagare

INTRODUCTION

Purificatory procedure of the whole body (*Panchakarma*) the unique treatment modality of *Ayurveda*, is basically designed to detoxify the body. Ayurvedic therapeutic emesis procedure (*Vamana*) and therapeutic purgation procedure (*Virechana*) are widely used therapies in *Panchakarma*. Particular diet regimen is to be followed after these two procedures (*samsarjana krama*; *SK*)¹, specifically meant for slow acclimatization of the subject from empty stomach to normal diet and thus to restore the normal digestion power (*agni bala*)².

Duration of specific diet regimen (SK) varies as per the extent of detoxification (*shuddhi*)³ i.e. in case of *Pravara Shudhi* (extensive purification) the diet regimen will be for 7 days, in *Madhyama Shudhi* (moderate purification) 5 days (*madhyama*) and in case of *avara shudhi* (mild purification) 3 days². But number of servings remains same i. e. two per day in all the cases.

Deha pramana (body frame) and *agni bala* (digestion capacity) are the two major variables to be considered in planning diet in respect to quantity and number of servings. Each with three sub variables forms a total of nine variables (categories) as shown below:

Table No. 01 *Deha pramana* (body frame) and *agni bala*⁴ (digestion capacity)

DEHA PRAMANA (Body Frame) ⁸	AGNI TYPE		
	TIKSHANAGNI	SAMAGNI	MANDAGNI
PRAVARA (Large body frame)	✓	✓	✓
MADHYAMA (Medium body frame)	✓	✓	✓
AVARA (Small body frame)	✓	✓	✓

In clinical practice it is observed that subjects having *Pravara deha pramana* (large body frame) with *tikshanagni* (fast digestive fire) may require larger quantity as well as additional servings of food, whereas *avara deha pramana* (Small body frame) with *mandagni* (slow digestive fire) may require smallest quantity and lesser servings of food. In the same manner other *Deha prakrutis* and *agnis* require different quantity and servings. Individual requirement varies when concerned to diet quantity and number of servings in respect to *deha pramana* and *agni bala*. However, in the present day practice, fixed quantity of *Samsarjana Krama* components are being served twice daily irrespective of individual variations or requirements. This fixed quantity of serving is superfluous or additional to some subjects and less or a smaller amount to some other. This fixed quantity of serving is leading to complaints in patients like Head ache, Craving for food, Flatulence etc.

So to overcome these complaints in subjects, we are proposing a study in the following pattern which includes Standardise the serving size of *Peyadi Samsarjana Krama* in accordance with *deha pramana* (Body frame) and *agni bala* (Digestive power) in *Madhyama shudhi* subjects.

METHODOLOGY: MATERIALS AND METHODS

MATERIALS:

Objectives: To standardize the serving size of *Peyadi Samsarjana Krama* in accordance with *Deha Pramana* (Body frame) & *Agni Bala* (Digestive strength)

Hypotheses

Alternate Hypothesis: Standardisation of serving size of *Peyadi Samsarjana Krama* is effective and possible.

Null Hypothesis: Standardisation of serving size of *Peyadi Samsarjana Krama* is not effective and not possible.

Consent: Consent was taken in local language from the subjects who underwent classical *Vamana/Virechana* therapy with *madhyama shudhi*.

STUDY SITE: The study was conducted at KLE Ayurveda Hospital & Medical Research Centre Shahapur, Belagavi Karnataka.

Sample Size and grouping: 81 apparently healthy / ill subjects on the bases of *Deha Pramana* and *Agni Bala*, who underwent classical *Vamana/Virechana* therapy with *madhyama Shuddhi*⁸ were selected randomly irrespective of sex and religion etc.

Groups: It is a single group study where *Madhyama Shudhi* subjects were served the regular size of *Samsarjana krama* diet for 5 days with 8 *anna kala* as per the *madhyama Shuddhi*.

• INCLUSION CRITERIA:

- Age group of 18 to 50 years of both sexes
- Subjects undergoing classical *Vamana/ Virechana* with *Madyama Shuddhi*

• EXCLUSION CRITERIA:

- *Sadyo Vamana / Sadyo Virechana*
- Subjects with *Vamana / Virechana Vyapat* (complications)
- Subjects with Diabetes mellitus
- Known case of food incompatibilities

Data collection and analysis:

The collected data was kept confidential; it was coded and analyzed for the study.

Method of Standardisation of *Samsarjana Krama*-

Standardized *Samsarjana Krama* diet was derived after a rigorous and meticulous assessment carried in 81 subjects by following steps

1. The subjects were served the *Samsarjana Krama* diet as per regular serving size which is followed in KLE Ayurveda Hospital Belagavi as below

Table No. 02 *Samsarjana Krama* diet served at KLE Ayurveda Hospital Belagavi

Sl. No.	Ahara Kalpana	Quantity served at one time	Anna Kala (No. of servings 8)
1	<i>Peya</i>	400ml	2
2	<i>Vilepi</i>	250gms	2
3	<i>Akruta mudga yusha (with Vilepi)</i>	200gms	1
4	<i>Kruta mudga yusha (with Vilepi)</i>	200gms	1
5	<i>Akruta Soya yusha (with Vilepi)</i>	200ml	1
6	<i>Kruta Soya yusha (with Vilepi)</i>	200ml	1

2. Time taken for *Jeernahara Lakshana* (digestion) was recorded in hours and minutes.
3. Twelve-hour dose or serving size was calculated on the lines of *Sneha Pana* dose fixation which is as follows

Quantity consumed _____ X For 12 hours how many ml
Hours taken for *Jeernahara Lakshana* (digestion)

For example-
250ml *Peya* (Rice gruel consumed)
_____ X 12 hours = 1000ml

3 hours
This 1000ml was served to particular subject as per his hunger in divided doses either 3 or more times and this 1000ml of *Ganji* is the fixed maximum dose for that particular subject. But the subject should not exceed this quantity of fixed dose which is served to him.

4. Same calculation pattern was followed to all remaining *samsarjana* diets like *vilepi*, *akrita yusha*, *krita yusha*, *akrita mamsa rasa*, *krita mamsa rasa*.

5. Time taken for *jeeneharar lakshana (digestion)* in Pravara, Madhyama and Avara Deha pramana subjects was calculated as follows.

6. Out of 81 subjects enrolled in the study, 10 subjects were of Avara Deha Pramana category, 50 subjects with Madhyama Deha pramana whereas 21 Subjects were of Pravara Deha pramana. The average time taken by particular deha pramana subjects/patients for *jeeneharar lakshana (digestion)* was calculated and it was considered as standardised serving size of that particular group.

7. Average time taken for *jeernehara lakshana* of particular category is calculated by following method. Summation of times taken for *Jeernahara Lakshana (Digestion)* of all subjects divided by number of subjects in that particular group. This will give average time taken by subjects of that particular category to digest particular samsarjana diet (*Peya/Vilepi* etc.) and this average is considered as standardised dose for that particular category.

Average Consumption of *Peyadi Samsarjana Krama* of all *Deha Pramana* is shown below

Table. No. 03 Standardised dose of *Peyadi Samsarjana Krama* as per *Deha Pramana*

Sl. No.	Deha Pramana	Peya	Vilepi	A.K.Y*	K. Y. **	A.K.S.Y. ** *	K.S.Y. ****
1	Avara	701.2	592.1	171.2	474.5	158.34	404.2
2	Madhyama	932.22	669.9	188.8	526.6	174.35	478.2
3	Pravara	1128.2	842.07	199.86	576.1	193.4	528.9

*Akruta Yusha, ** Krita Yusha, ***Akruta Soya Yusha, ****Krita Soya Yusha

Note: These above averages of *Peya*, *Vilepi*, *Akruta Yusha*, *Kruta Yusha*, *Akruta Soya Yusha* and *Kruta Soya Yusha* are considered as Standard Dose for those particular *Deha Pramana* with *Madhyama shudhi* subjects.

INTERVENTIONS:

Subjects undergone classical *vamana/virechana* with *madhyama shudhi* (medium purification) were included in the study and they were served the regular serving size of *Samsarjana Krama* diet i.e., fixed dose through aluminum bowls used at KLE Ayurved Hospital Belagavi, Karnataka for 5 days with 8 *anna kala* (8 food servings). Which is shown in following chart.

Table No. 04. *Samsarjana* regimen with quantity and time of serving

Name of the <i>Anna</i> (Food) served to the subjects	Fixed Matra (Quantity) served through special bowls	Number of servings	Time of serving
<i>Peya</i> ⁵	400ml	2 times	1 st <i>anna</i> (food) served - On the day of <i>Vamana</i> / <i>Virchana</i> * 2 nd <i>anna</i> served - 2 nd day morning
<i>Vilepi</i> ⁶	250gms	2 times	3 rd <i>anna</i> serving - 2 nd day evening 4 th <i>anna</i> serving - 3 rd day morning
<i>Akruta mudga Yusha</i>	200ml	1 time	5 th <i>anna</i> serving - 3 rd day evening
<i>Kruta mudga Yusha</i> ⁷	200ml	1 time	6 th <i>anna</i> serving - 4 th day morning
<i>Akruta Soya Yusha</i> **	200ml	1 time	7 th <i>anna</i> serving - 4 th day evening
<i>Kruta Soya Yusha</i>	200ml	1 time	8 th <i>anna</i> serving - 5 th day morning
Normal food	-	-	5 th day evening (start intake in increasing order)

Note: **Samsarjana* diet was served when subject expresses *jeernahara lakshana* and proper hunger.

** In place of *Mamsa Rasa* we have served *Soya Yusha* as it is rich in protein and most of the qualities are same in both.

***Deha pramana* or body frame assessment-**

Determination of body frame size is one of the most important factors in this study. Total number of participants were divided into three categories based on *Deha Pramana* and *Agni* i. e. *Pravara*, *Madhyama* and *Avara Dehapramana* and *Sama*, *Manda* and *Teekshnagni*. These categories were formed on the bases of Scoring which is shown below.

For *Deha Pramana* assessment height and weight are considered and given scorings. For this scoring, standard height of the Indian Men and Women are considered, where the standard height of the Indian Women is 152.6cms (5ft) and Standard height of the Indian Men is 164.9cms (5ft 4.9 inches). Scoring is given as below.

Scoring in Males

HEIGHT SCORING: Indian Male Standard Height is 164.9

Score 1 = If height is < 159.9cms

Score 2 = If height is between 159.9cms to 169.9cms

Score 3 = If height is > 169.9cms

Scoring in Females

HEIGHT Scoring: Indian Female Standard Height is 152.6cms

Score 1 = If height is < 147.6cms

Score 2 = If height is between 147.6cms to 157.6cms

Score 3 = If height is > 157.6cms

Weight Scoring in both gender

To calculate the Ideal Body weight formula was used was "Height in cms minus 100"

Height in cms - 100 = IBW (Ideal Body Weight)

Score 1 = If weight is < 5Kgs of IBW

Score 2 = If weight is between - 5Kgs to + 5Kgs of IBW (Minus 5kgs to Plus 5Kgs)

Score 3 = If weight is > 5Kgs of IBW

Agni Scoring in both gender

Score 2 = *Mandagni*

Score 4 = *Samagni*

Score 6 = *Teekshagni*

Sum of total scores given to Height, Weight and *Agni* of each subject is considered as total score of that subject. It has been observed that Scores starts from lowest number 4 and end up with highest number 12 score. Based on these scores *Deha pramana* of the subject is decided as *Pravara*, *Madhyama* and *Avara deha pramana* shown below.

Table No.05 Deha Pramana Assessment

<i>Deha Pramana</i>	Scores
<i>Avara Dehapramana</i>	4, 5 and 6
<i>Madhyama Deha Pramana</i>	7, 8, 9 and 10
<i>Pravara Deha Pramana</i>	11 and 12

Based on the above, total scores of each and every subject who have involved in the study were calculated and as per their score they were separated. The subjects who fell in Score 4, 5 and 6 are considered as *Avara Deha Pramana purusha*. 7, 8, 9 & 10 are *Madhyama deha Pramana* whereas 11 & 12 scores are considered as *Pravara Deha Pramana*.

Next step is finding the Average amount of *Peyadi* diet consumed by particular *Deha Pramana* subjects. For this sum of each of *Peya*, *Vilepi*, *Akrita* and *Krita Yusha*, *Akrita* and *Krita Soya Yusha* consumed by particular *Deha pramana* subjects is calculated. Later **average** of *Samsarjana* Diet consumed by subjects is calculated and this average is considered as standard dose for that particular *Deha pramana*.

Average consumption of all Male and Female Subjects is calculated and which is as follows.

ASSESSMENT OF AGNI:

As per *Madhava Nidana*, self-assessment questionnaires were asked to subjects/patients for recording the *agni bala* (digestive strength) by following questions.

Mandagni - Even small quantity of regular meal (easily digestible) may take longer time to digest and reduced appetite for the next scheduled meal.

Samagni - Regular serving of meal consumed on regular intervals gets digested normally and good appetite for next scheduled meal.

Teekshnagni - Regular serving size of regular meal gets digested quickly with frequent hunger pangs and making the person to eat at frequent intervals before next meal scheduled time. Even heavy meals get digested easily before the next scheduled meal time.

ASSESSMENT PARAMETERS: Signs of Digestion/ Indigestion like

- Head ache
- Craving for food
- Flatulence
- Giddiness
- Vomiting

- Distaste
- Lethargy
- Aversion to food
- Presence or absence of exhaustion
- Abdominal burning sensation
- Abdominal heaviness
- Blood Glucose level (Thrice on the day of *vamana/virechana*)

This standardized *Samsarjana Karma* will be served to the respective category subjects.

Discussion:

Accordingly, the following hypoglycaemic or indigestion related signs and symptoms are being encountered commonly, viz. Head ache, General weakness, Craving for food, Fullness of Abdomen, Indigestion, flatulence, abdominal distension and others. Hence there is a need to study the individual requirement and its use.

Conclusion: This is a quasi randomised control study and will help to produce a standardised dose according to *Deha pramana* and *Agni bala* of the subjects. This is an attempt to reduce regular the complications in traditional practice of *samsarjana* diet like giddiness, head ache, flatulence etc. during the *samsarjana kala*.

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Impact of Consistent and Standardized Administration of Peyadi Samsarjana Krama in Post-Vamana-Virechana (Dietary Regimens Post Emesis and Purgation Therapies) Protocols: A Quasi-Randomized Control Trial

Sandeep S Sagare¹, Ashok Patil^{1,*}, B S Prasad², Kadambari S³

¹Department of Swasthavritta and Yoga, KAHER's Shri. B. M. Kankanawadi Ayurved Mahavidyalaya, Shahapur, Belagavi, Karnataka, INDIA.

²President, Board of Ayurveda, NCISM, Delhi, INDIA.

³Department of Kriya Sharira, KAHER's Shri. B. M. Kankanawadi Ayurved Mahavidyalaya, Shahapur, Belagavi, Karnataka, INDIA.

ABSTRACT

Background: *Ayurveda*, an ancient holistic health system, underscores personalized well-being through tailored approaches to health and disease. The post *Vamana-Virechana* procedures are vital in *Ayurvedic* detox, promoting balance and toxin elimination. *Peyadi Samsarjana Krama* (dietary regimen), a recognized *Ayurvedic* formulation, shows promise in supporting post *Vamana-Virechana* (post emesis and purgation therapies). However, the use of standardized serving sizes is still an area requiring exploration and research. **Aim and Objectives:** To establish a uniform serving size for *Peyadi Samsarjana Krama* based on *deha pramana* (body frame) and *agni bala* (digestive capacity). To assess the impact of the standardized serving size compared to the conventional serving size of *Peyadi Samsarjana Krama*. **Materials and Methods:** The study, conducted at KLE Ayurveda Hospital and Medical Research Centre in Karnataka, included 240 individuals undergoing *Vamana/Virechana* with *Madhyama Shudhi*. Using computer-generated randomization, subjects were divided into two groups: the control group (Group 1) received the regular serving of *Samsarjana krama* and the study group (Group 2) received the standardized serving, each group comprising 120 subjects. **Results:** In both groups, subjective parameters such as headache, hunger, giddiness and lethargy were assessed. In Group 1, 58% experienced headaches on the first day morning, while in Group 2, 93-96% were headache-free at both times. Lethargy was present in 47.9% in Group 1 on day 5 evening, while Group 2 had 73.6% to 96.7% without lethargy on all 5 days. Statistically significant results were obtained. FBS and RBS levels were higher ($B=1.44$) in the Standardized Serving Size, significantly so ($B=4.37$, $p<0.05$) compared to the regular serving size. **Conclusion:** The study group (Group 2), which received the standardized serving of *Samsarjana Krama*, demonstrated greater effectiveness and better tolerance compared to the control group (Group 1).

Keywords: *Vamana*, *Virechana*, *Peyadi Samsarjana Krama*, *Madhyama Shudhi*.

Correspondence:

Dr. Ashok Patil,
Department of Swasthavritta and Yoga,
KAHER's Shri. B. M. Kankanawadi Ayurved
Mahavidyalaya, Shahapur, Belagavi,
Karnataka, INDIA.
Email: sandeepsagare@gmail.com

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INTRODUCTION

The term "*Panchakarma*" denotes a set of five therapeutic procedures within *Ayurveda*, specifically aimed at internally purifying the body by expelling accumulated morbid *Dosha* through the most accessible route. According to *Ayurveda* principles, maintaining health involves achieving a balance of *Dosha*, *Dhatu*, *Jatharagni* and ensuring the elimination of *Mala* through defecation.¹

The term "*Samsarjana Krama*" is derived from three distinct words. "*Sam*" is a prefix meaning "best" or "proper," and "*Sarjana*" signifies upgrading or increasing. "*Krama*" denotes a series, proceeding, course, order or step. According to M. Monier Williams' dictionary, "*Samyak*" translates to proper or in a good way and "*Krama*" denotes order. Consequently, *Samsarjana Krama* can be understood as a series of dietary practices aimed at enhancement or an ordered approach to dietary increase. It's noteworthy that the classical *Ayurveda* texts don't explicitly mention the term "*Samsarjana*." The term is introduced by *Chakrapani*, a commentator, in his commentary on *Charaka Samhita*.²

Since *Acharya* has not provided a specific definition for *Samsarjana Krama*, it can be briefly described as a set of strict



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and well-defined post-Shodhana dietary regimens intended for individuals to restore disturbed Agni (digestive power) to normalcy, *Snehapana* (oral intake of ghee) and *Langhana* (emaciating therapies).³ *Ayurvedic* texts outline various methods of *Samsarjana Krama*, including *Peyadi Samsarjana Krama*,⁴ *Tarpanadi Samsarjana Krama*,⁵ and *Rasa Samsarjana Krama*.⁶

The *Jatharagni* plays a crucial role in sustaining *Oja* and life and any disturbance in it can lead to the onset of diseases. Following *Panchakarma*, particularly *Vamana* and *Virechana*, the *Jatharagni* becomes disrupted and weakened, potentially causing a decline in the patient's strength. It is not advisable to immediately resume a regular diet during this diminished state of

Jatharagni post-Samshodhana. Instead, a specific dietary regimen known as *Samsarjana Krama* is implemented. This involves a gradual reintroduction of food, progressing from light (*Laghu*) to heavy (*Guru*) *Ahara* in accordance with *Shudhi*. This step-by-step approach aims to enhance *Jatharagni* (digestive power), provide systematic nourishment to the patient and facilitate adaptability across all systems of the body. If the patient fails to adhere to proper precautions and a regulated diet, it can result in various complications. To prevent these complications following *Samshodhana Krama*, the *Samsarjana Krama* is crucial and advantageous. *Acharya Charaka* emphasizes the significance of *Agni* in *Samsarjana Krama* with an analogy: Just as a small

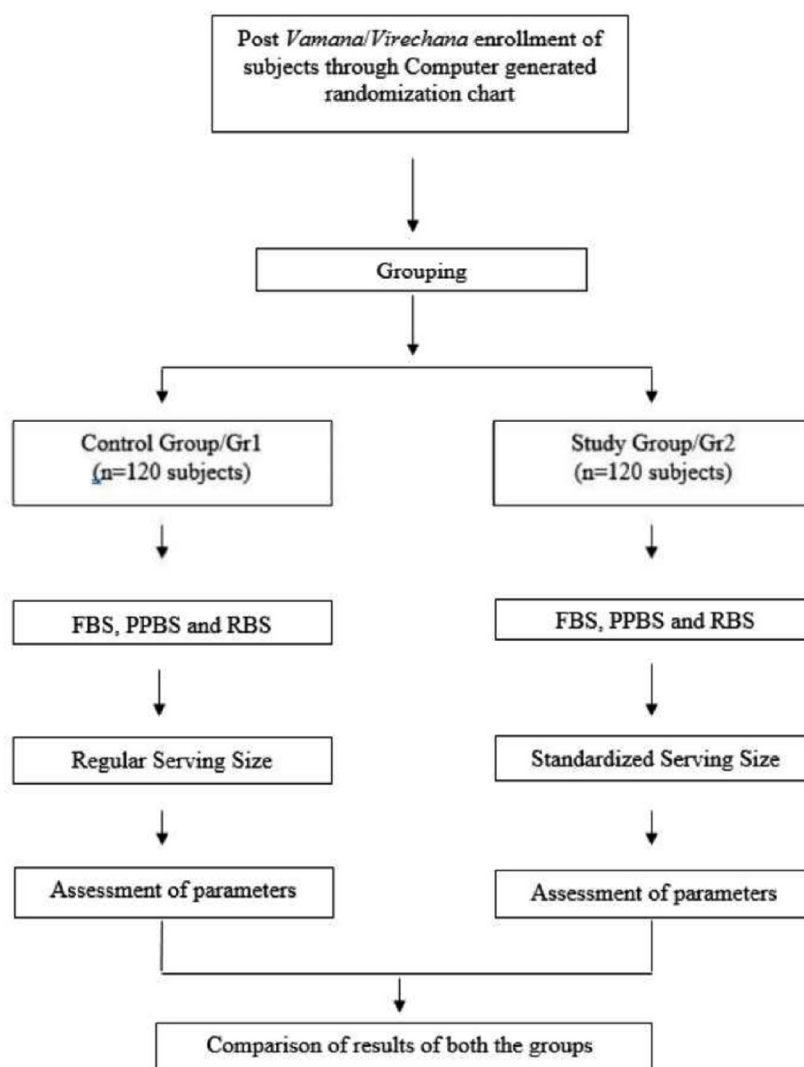


Table 1: Samsarjana Krama diet served at KLE Ayurveda Hospital, Belagavi.

Sl. No.	Ahara Kalpana	Quantity served at one time	Anna Kala (No. of servings 8)
1	Peya	400 mL	2
2	Vilepi	250 g	2
3	Akruta mudga yusha (with Vilepi)	200 g	1
4	Kruta mudga yusha (with Vilepi)	200 g	1
5	Akruta Soya yusha (with Vilepi)	200 mL	1
6	Kruta Soya yusha (with Vilepi)	200 mL	1

fire when kindled gradually, with substances like dry grass and cow dung, becomes robust and stable, similarly, in the case of Jatharagni after Vamana Krama and Virechana Krama, the Peyadi Krama enables Jatharagni to efficiently digest all kinds of food.⁷

Samsarjana Krama and Krama should not be equated, as Krama refers to any procedure, while Krama denotes a specific numbering sequence that must be adhered to. Peya, a more liquid substance with lower carbohydrate content, is easily digestible. In contrast, Vilepi, a semi-solid preparation, has a thicker consistency and includes rice particles, resulting in higher carbohydrate content. Mudga yusha, a green gram soup, is prepared in the Akruta form without the addition of salt and Ghrita, while in the Kruta form, salt and Ghrita are included, providing simple plant proteins.

Mamsarasa, a mutton soup, is prepared in the Akruta form for simpler proteins, while the Kruta Mamsarasa contains complex proteins such as animal proteins and fats. Rasa Samsarjana Krama is typically employed following Peyadi Samsarjana Krama. Tarpanadi Krama is used for the Tarpana of the patient, aiming to nourish the Dhātu of the Samshodhita Purusha (an individual who has undergone Vamana and Virechana).^{4,5}

The administration of Peyadi Samsarjana Krama involves a meticulous balance of herbal ingredients, each selected for its specific therapeutic properties. These components synergistically aim to optimize digestive functions, enhance metabolic processes and promote overall rejuvenation following the cleansing procedures of Vamana (therapeutic emesis) and Virechana (therapeutic purgation). To advance our understanding of the therapeutic efficacy of Peyadi Samsarjana Krama in post Vamana-Virechana protocols, a Quasi-Randomized Control Trial has been designed. This study seeks to investigate the impact of a standardized and regular serving size of Peyadi Samsarjana Krama on key health parameters, including digestive function, metabolic balance and overall well-being. The trial aims to provide valuable insights into the potential benefits of consistent dosing, offering a foundation for refining Ayurvedic post-detoxification practices and enhancing the holistic care of individuals undergoing these traditional therapies. Through a rigorous and scientific approach, this research endeavours to contribute to the evidence-based integration of Ayurvedic principles into contemporary healthcare practices.

MATERIALS AND METHODS

The research took place at KLE Ayurveda Hospital and Medical Research Centre in Shahapur, Belagavi district of Karnataka, utilizing a Quasi Randomized Control Trial design. A sample of 240 individuals, aged 18 to 50, who were apparently healthy or ill and undergoing Vamana/Virechana with Madhyama Shudhi, was randomly chosen. Subsequently, the 240 subjects were split into two groups based on interventions. Both the Control Group (Group 1), receiving a regular serving size of Peyadi samsarjana krama and the Study Group (Group 2), receiving a standardized serving size of Peyadi samsarjana krama, Consisting of 120 subjects each. The randomization process was carried out using a computer-generated randomization method (Table 1).

Method of Standardisation of Samsarjana Krama

Standardized Samsarjana Krama diet was derived after a rigorous and meticulous assessment carried out on 81 subjects by following steps;

The subjects were served the Samsarjana Krama diet as per regular serving size which is followed or practiced at KLE Ayurveda Hospital Belagavi as below;

Here 400 mL of peya is served to the subject or the patient who underwent Samshodhana Krama as per his proper hunger. The time of consumption of peya is noted and later observed for the next hunger time. During this hunger subject or patient should exhibit the Jeernahara Lakshana (digestion) and this was recorded in hours and minutes.

Twelve-hour dose or serving size was calculated on the lines of Sneha Pana dose fixation which is as follows;

$$\frac{\text{Quantity Consumed x for 12 hr how many mL}}{\text{hr taken for Jeernahara Lakshana (digestion)}}$$

For example

$$\frac{400 \text{ mL Peya (Rice gruel) consumed}}{3 \text{ hr (Need for Jeernahara Lakshana)}} = 1600 \text{ mL}$$

This 1600 mL was served to him/her for consumption as per hunger in divided doses either 2 or more servings and this 1600 mL of *Peya* is the fixed maximum dose for that particular subject/patient. He/she should not exceed this quantity which is fixed for him during that period.

The same calculation pattern was followed to all remaining *Samsarjana Krama* diets like *Vilepi*, *Akruta Yusha*, *Kruta Yusha*, *Akruta Soya Yusha*, *Kruta Soya Yusha*.

For standardization of dose in *Pravara*, *Madhyama* and *Avara Deha Pramana* subjects as per *agni* was calculated as follows.

81 subjects enrolled in the study, in different *Deha Pramana* groups. Standardized quantity of *peya* to be supplied to particular *dehapramana* was calculated by following method. Summation of quantity calculated for all the members of particular *dehapramana* and particular *agni* divided by number of subjects in that particular *Deha Pramana* with *agni*.

Ex. Suppose 6 *Pravara Dehapramana* subjects with *samagni* had consumed the following quantities of *peya* as 1200 mL, 1250 mL, 1300 mL, 1400 mL, 1500 mL and 1600 mL. The standardized dose of *Samsarjana Krama* is calculated by summation of the quantity of *peya* consumed will be 8250 mL which divided by 6 (subjects/patients) and the answer will be 1375 mL.

In the same manner standardized dose of remaining *Samsarjana* diets like *vilepi*, *akruta* and *kruta yusha*, *akruta* and *kruta soya yusha* for different *deha pramana* were calculated. These standardized doses were given to post *vamana/virechana* in group 2 i.e. study group.

Methodology

Following classical *Vamana* and *Virechana Krama*, participants in control or group 1 received the customary portion of *Samsarjana Krama*, a practice conducted at KLE Ayurveda Hospital Shahapur Belagavi for duration of 5 days with 8 *anna kala*. The preparation method adhered to classical procedures. Meanwhile, participants in the study or group 2 received a standardized serving size of *Samsarjana Krama* based on the specified inclusion criteria. In both groups, subjective assessment parameters including headache, food cravings, giddiness and lethargy, as well as objective parameters such as fasting blood sugar, postprandial blood sugar and random blood sugar, were evaluated on the first day of the *Samsarjana Krama* regimen.

Inclusion criteria

- Age group of 18 to 50 years of both sexes.
- Subjects undergoing classical *Vamana/ Virechana (Madhyama Shuddhi)*.

Exclusion criteria

- *Sadyo Vamana/Sadyo Virechana*.
- Subjects with *Vaman/Virechana Vyapat* (complications).
- Subjects with Diabetes mellitus.
- Known cases of food incompatibilities.

Procedure

It is an Interventional Randomized Controlled trial where Control group of subjects will be served the regular size of *Samsarjana Krama* for 5 days with 8 *anna kala* (food servings). Which inturn consists of *Peya-2*, *Vilepi-2*, *Akruta mudga yusha-1*, *Kruta mudga yusha-1*, *Soya yusha-1*, *Soya yusha-1* serving. Quantity at Servings are *Peya* 400 mL, *Vilepi* 250 g, *Mudga yusha* 200 mL, *Soya yusha*-200 mL. Trial group subjects will be served as the standardized serving size.

Subject assessment and categorization

Subjects will be categorised on the bases of *Deha Pramana* (body frame) into *Pravara*, *Madhyama* and *Avara*. Inturn these categories will be sub divided on the basis of *agni i.e Samagni*, *Teekshnagi*, *Mandagni*. In total subjects will be categorised into 9 factors as shown in Tables 1 and 2.

Deha pramana or Body Frame assessment was assessed by height, weight and BMI of the subjects and the Methodology used for standardization of *samsarjana krama* is followed as per the method used by sandeepsagare, et al.⁸

Preparation of Peyadi Samsarjana Krama

All the preparations used in *Samsarjana Krama* were prepared as per the preparation methods explained in the classics and served to the subjects.

Table 2: Categorisation of subjects based on *Dehapramana* and *agni*.

Sl. No.	Deha pramana	agni
1	Pravara	Samagni
2		Teekshnagi
3		Mandagni
4	Madhyama	Samagni
5		Teekshnagi
6		Mandagni
7	Avara	Samagni
8		Teekshnagi
9		Mandagni

Sample size

Stratified sampling with optimum allocation of the different structure of the body Study

$$n = \frac{Z^2 \times SD^2}{(20)^2 SD^2}$$

$$n = \frac{(1.96)^2}{0.04} \times 1.2 \quad N = 120$$

This is the sample size reducing 20% attrition and 95% confidence level

Statistical analysis

Between the groups assessment of non-parametric variables like headache etc. will be through the chi-square test and within group assessment will be through Mac-nimar test. Parametric variables like blood glucose estimation will be assessed through repeated measure ANOVA. All tests will be considered statistically significant at $p < 0.05$.

Assessment Parameters

Assessment parameters are the different untoward effects frequently encountered during conventional Samsarjana Krama practice were;

Subjective Parameters:

- Head ache
- Hunger
- Giddiness
- Lethargy
- Objective Parameters
- FBS, PPBS and RBS on Day of Vamana and Virechana.

RESULTS

Table 3 illustrates the distribution of subjects in two groups: Regular Serving Size and Standardized Serving Size, based on Ahara-Vihara of Samsarjana Krama

Table 4 presents a visual representation of the occurrence of headaches in the morning and evening for individuals consuming regular and standard serving sizes of Samsarjana Krama on different days.

Table 5 depicts the occurrence of morning hunger in individuals following both regular and standard serving sizes of Samsarjana Krama across different days.

Table 6 depicts the morning giddiness experienced by individuals following both regular and standard serving sizes of Samsarjana Krama on different days.

Table 3: Distribution of subjects in Regular and standardized Serving Size groups by Ahara-Vihara.

Ahara-Vihara		RS	SS	Total
		N (%)	N (%)	N (%)
Diet	Veg	39(32.5)	34(28.3)	73(30.4)
	Mixed	81(67.5)	86(71.7)	167(69.6)
Ahara Matra	Alpa	9(7.5)	5(4.2)	14(5.8)
	Madhyama	100(83.3)	97(80.8)	197(82.1)
	Pravara	11(9.2)	18(15)	29(12.1)
Ahara Sevana Kala	Two meals per Day	12(10.0)	14(11.7)	26(10.8)
	Three meals per day	93(77.5)	89(74.2)	182(75.8)
	More than 3 meals per day	15(12.5)	17(14.2)	32(13.3)
Sleep	Sound	112(93.3)	117(97.5)	229(95.4)
	Disturbed	8(6.7)	3(2.5)	11(4.6)
Life style	Moderate	43(35.8)	49(40.8)	92(38.3)
	Household work	13(10.8)	10(8.3)	23(9.6)
	Sedentary	60(50)	55(45.8)	115(47.9)
	Heavy	4(3.3)	6(5)	10(4.2)
Ahara Shakti	Pravara	14(11.7)	14(11.7)	28(11.7)
	Madhyama	105(87.5)	104(86.7)	209(87.1)
	Avara	1(0.8)	2(1.7)	3(1.3)
Koshtha	Mrudu	6(5)	7(5.8)	13(5.4)
	Madhyama	106(88.3)	104(86.7)	210(87.5)
	Krura	8(6.7)	9(7.5)	17(7.1)

Ahara-Vihara		RS	SS	Total
		N (%)	N (%)	N (%)
Dehapramana	Avara	15(12.5)	11(9.2)	26(10.8)
	Madhyama	74(61.7)	70(58.3)	144(60)
	Pravara	31(25.8)	39(32.5)	70(29.2)
Agni	Mandagni	25(20.8)	25(20.8)	50(20.8)
	Samagni	73(60.8)	65(54.2)	138(57.5)
	Teekshnagni	22(18.3)	30(25)	52(21.7)

Note: RS: Regular Serving Size of Samsarjana Krama, SS: Standardized Serving Size of Samsarjana Krama.

Table 4: Head ache in the morning and evening among regular and Standard Serving sizes of Samsarjana Krama according to Days.

Head Ache		Morning		Evening	
		Regular Serving Size N (%)	Standardized Serving Size N (%)	Regular Serving Size N (%)	Standardized Serving Size N (%)
Day 1	No	40 (33.6)	112 (93.4)	102 (84.9)	114 (95)
	Mild	70 (58)	4 (3.3)	6 (5)	4 (3.3)
	Moderate	10 (8.4)	4 (3.3)	11 (9.2)	2 (1.7)
	Severe Craving	0 (0)	0 (0)	1 (0.8)	0 (0)
Day 2	No	115 (95.8)	118 (98.3)	114 (95)	116 (96.7)
	Mild	3 (2.5)	1 (0.8)	1 (0.8)	2 (1.7)
	Moderate	2 (1.7)	1 (0.8)	5 (4.2)	2 (1.7)
	Severe Craving	0 (0)	0 (0)	0 (0)	0 (0)
Day 3	No	113 (94.1)	117 (97.5)	105 (87.4)	116 (96.7)
	Mild	4 (3.4)	2 (1.7)	5 (4.2)	3 (2.5)
	Moderate	3 (2.5)	1 (0.8)	10 (8.4)	1 (0.8)
	Severe Craving	0 (0)	0 (0)	0 (0)	0 (0)
Day 4	No	101 (84)	114 (95)	114 (95)	118 (98.3)
	Mild	12 (10.1)	1 (0.8)	3 (2.5)	1 (0.8)
	Moderate	6 (5)	5 (4.1)	3 (2.5)	1 (0.8)
	Severe Craving	1 (0.8)	0 (0)	0 (0)	0 (0)
Day 5	No	63 (52.1)	114 (95)	100 (83.2)	116 (96.7)
	Mild	53 (44.5)	5 (4.1)	10 (8.4)	2 (1.7)
	Moderate	4 (3.4)	1 (0.8)	9 (7.6)	2 (1.7)
	Severe Craving	0 (0)	0 (0)	1 (0.8)	0 (0)

Table 7 demonstrates the occurrence of morning lethargy among individuals following the regular and standard serving sizes of Samsarjana Krama across different days.

Table 8 illustrates the outcomes of a Generalized Linear Model, specifically examining the impact of Standardized Serving size compared to Regular Serving on blood glucose levels.

DISCUSSION

As per Acharya Chakrapani, not only Vamana and Virechana, but also other Panchakarma techniques like Basti, Nasya and Raktamokshana are recommended for Shodhana purposes. However, in a busy lifestyle, it becomes challenging to

consecutively undergo all these therapies. If an individual undergoes Shodhana procedures once a year, it can lead to overall health benefits throughout the entire year.

According to our investigation, both groups exhibited subjective symptoms such as headache, hunger, giddiness and lethargy. In the first group, 58% experienced headaches on the morning of the first day, while in the second group, 93-96% reported an absence of headaches at both time points. Severe cravings were observed in more than 45.4% of the first group in the morning on days 1 and 5 and over 47.1% in the evening, whereas over 90% of the second group had no complaints. Mild giddiness was reported by 44.5% in the first group during the morning and 43.7%

Table 5: Morning Hunger among Regular and Standard Serving Size of Samsarjana Krama according to Days.

Hunger		Morning		Evening	
		Regular Serving Size N (%)	Standardized Serving Size N (%)	Regular Serving Size N (%)	Standardized Serving Size N (%)
Day 1	No	102 (84.9)	105 (87.6)	43 (36.1)	102 (85.1)
	Mild	8 (6.7)	13 (10.7)	6 (5)	5 (4.1)
	Moderate	4 (3.4)	2 (1.7)	14 (11.8)	13 (10.7)
	Severe Craving	6 (5)	0 (0)	57 (47.1)	0 (0)
Day 2	No	105 (87.4)	117 (97.5)	104 (87.4)	119 (99.2)
	Mild	9 (7.6)	3 (2.5)	8 (6.7)	1 (0.8)
	Moderate	4 (3.4)	0 (0)	2 (5)	0 (0)
	Severe Craving	2 (1.7)	0 (0)	1 (0.8)	0 (0)
Day 3	No	105 (87.4)	96 (80.2)	97 (81.5)	114 (95)
	Mild	3 (2.5)	11 (9.1)	8 (6.7)	4 (3.3)
	Moderate	8 (6.7)	13 (10.7)	11 (8.4)	2 (1.7)
	Severe Craving	4 (3.4)	0 (0)	4 (3.4)	0 (0)
Day 4	No	57 (47.9)	117 (97.5)	103 (86.6)	108 (90.1)
	Mild	8 (6.7)	3 (2.5)	6 (5)	1 (0.8)
	Moderate	2 (1.7)	0 (0)	8 (5.9)	11 (9.1)
	Severe Craving	53 (43.7)	0 (0)	3 (2.5)	0 (0)
Day 5	No	61 (51.3)	114 (95)	105 (87.4)	106 (88.4)
	Mild	4 (3.4)	5 (4.1)	5 (4.2)	13 (10.7)
	Moderate	0 (0)	1 (0.8)	7 (5.9)	1 (0.8)
	Severe Craving	55 (45.4)	0 (0)	3 (2.5)	0 (0)

Table 6: Morning Giddiness among Regular and Standard Serving Size of Samsarjana Krama according to Days.

Giddiness		Morning		Evening	
		Regular Serving Size N (%)	Standardized Serving Size N (%)	Regular Serving Size N (%)	Standardized Serving Size N (%)
Day 1	No	66 (55.5)	120 (100)	113 (95)	120 (100)
	Mild	54 (44.5)	0 (0)	5 (3.4)	0 (0)
	Moderate	0 (0)	0 (0)	2 (1.7)	0 (0)
	Severe	0 (0)	0 (0)	0 (0)	0 (0)
Day 2	No	117 (97.5)	120 (100)	119 (99.2)	120 (100)
	Mild	2 (1.7)	0 (0)	1 (0.8)	0 (0)
	Moderate	1 (0.8)	0 (0)	0 (0)	0 (0)
	Severe	0 (0)	0 (0)	0 (0)	0 (0)
Day 3	No	119 (99.2)	120 (100)	65 (54.6)	120 (100)
	Mild	1 (0.8)	0 (0)	53 (43.7)	0 (0)
	Moderate	0 (0)	0 (0)	2 (1.7)	0 (0)
	Severe	0 (0)	0 (0)	0 (0)	0 (0)

Giddiness		Morning		Evening	
		Regular Serving Size N (%)	Standardized Serving Size N (%)	Regular Serving Size N (%)	Standardized Serving Size N (%)
Day 4	No	116 (96.6)	120 (100)	119 (99.2)	120 (100)
	Mild	3 (2.5)	0 (0)	1 (0.8)	0 (0)
	Moderate	1 (0.8)	0 (0)	0 (0)	0 (0)
	Severe	0 (0)	0 (0)	0 (0)	0 (0)
Day 5	No	117 (97.5)	120 (100)	66 (55.5)	120 (100)
	Mild	2 (1.7)	0 (0)	53 (43.7)	0 (0)
	Moderate	1 (0.8)	0 (0)	1 (0.8)	0 (0)
	Severe	0 (0)	0 (0)	0 (0)	0 (0)

Table 7: Morning Lethargy among Regular and Standard Serving Size of *Samsarjana Krama* according to Days.

Lethargy		Morning		Evening	
		Regular Serving Size N (%)	Standardized Serving Size N (%)	Regular Serving Size N (%)	Standardized Serving Size N (%)
Day 1	No	59 (49.6)	110 (91.7)	99 (82.4)	89 (73.6)
	Relieved by rest.	6 (5)	8 (6.6)	9 (7.6)	29 (24.8)
	Not relieved by rest, limiting instrumental ADL (e.g., Preparing meals, shopping and managing money.	54 (44.5)	1 (0.8)	8 (6.7)	1 (0.8)
	Not relieved by rest, limiting self-care ADL (e.g., Bathing, dressing/undressing, feeding self, using the toilet.	1 (0.8)	1 (0.8)	4 (3.4)	1 (0.8)
Day 2	No	109 (90.8)	118 (98.3)	114 (95)	116 (96.7)
	Relieved by rest.	6 (5)	1 (0.8)	3 (2.5)	2 (1.7)
	Not relieved by rest, limiting instrumental ADL (e.g., Preparing meals, shopping and managing money.	5 (4.2)	1 (0.8)	2 (1.7)	1 (0.8)
	Not relieved by rest, limiting self-care ADL (e.g., Bathing, dressing/undressing, feeding self, using the toilet.	0 (0)	0 (0)	1 (0.8)	1 (0.8)
Day 3	No	110 (91.6)	110 (91.7)	115 (95.8)	113 (94.2)
	Relieved by rest.	3 (2.5)	9 (7.4)	2 (1.7)	6 (5)
	Not relieved by rest, limiting instrumental ADL (e.g., Preparing meals, shopping and managing money.	4 (3.4)	1 (0.8)	2 (1.7)	1 (0.8)
	Not relieved by rest, limiting self-care ADL (e.g., Bathing, dressing/undressing, feeding self, using the toilet.	3 (2.5)	0 (0)	1 (0.8)	0 (0)

Lethargy		Morning		Evening	
		Regular Serving Size N (%)	Standardized Serving Size N (%)	Regular Serving Size N (%)	Standardized Serving Size N (%)
Day 4	No	59 (49.6)	114 (95)	103 (85.7)	94 (78.5)
	Relieved by rest.	6 (5)	5 (4.1)	9 (7.6)	25 (20.7)
	Not relieved by rest, limiting instrumental ADL (e.g., Preparing meals, shopping and managing money.	55 (45.4)	1 (0.8)	6 (5)	1 (0.8)
	Not relieved by rest, limiting self-care ADL (e.g., Bathing, dressing/undressing, feeding self, using the toilet.	0 (0)	0 (0)	2 (1.7)	0 (0)
Day 5	No	113 (94.1)	111 (92.6)	56 (47.1)	116 (96.7)
	Relieved by rest.	3 (2.5)	7 (5.8)	2 (1.7)	2 (1.7)
	Not relieved by rest, limiting instrumental ADL (e.g., Preparing meals, shopping and managing money.	4 (3.4)	1 (0.8)	58 (47.9)	1 (0.8)
	Not relieved by rest, limiting self-care ADL (e.g., Bathing, dressing/undressing, feeding self, using the toilet.	0 (0)	1 (0.8)	4 (3.4)	1 (0.8)

Table 8: Results of Generalized Linear model: Effect of Standardized Serving size over Regular Serving on Blood glucose levels.

Parameter	B	Std. Error	p-value	95% Confidence Interval	
				Lower Bound	Upper Bound
Dependent Variable: FBS					
Intercept	93.101	1.239	0.00	90.66	95.54
Groups					
Regular Serving Size					
Standardized Serving Size	1.446	0.781	0.066	-0.09	2.99
Dependent Variable: PPBS					
Intercept	116.361	1.598	0.00	113.212	119.51
Groups					
Regular Serving Size					
Standardized Serving Size	1.799	1.008	0.076	-0.188	3.786
Dependent Variable: RBS					
Intercept	134.243	2.357	0.00	129.599	138.888
Groups					
Regular Serving Size					
Standardized Serving Size	4.37	1.487	0.004	1.44	7.3

experienced it in the evening. In the second group, no participants reported giddiness in either the morning or evening on all days. On the morning of days 1 and 4 in the first group, 44.5% were free from lethargy, while in the second group, over 91.7% were not lethargic on all 5 days. In the evening of day 5, 47.9% in the first group experienced lethargy, whereas in the second group, 73.6%

to 96.7% were free from lethargy on all 5 days. The results were statistically significant. Fasting Blood Sugar (FBS) and Random Blood Sugar (RBS) levels were higher in the Standardized Serving Size group (B=1.44) compared to the Regular Serving Size and this difference was significantly higher (B=4.37, $p<0.05$) in the Standardized Serving Size group.

According to research conducted by Yemalwad *et al.*, (2023),⁹ a critical aspect of *Ayurveda* treatments lies in *Panchakarma*, a therapeutic approach aimed at preventing and treating diseases while preserving overall health. This therapy, deemed valuable for its effectiveness, encompasses five procedures serving various purposes. Among these, *Virechana* and *Vamana Karma* stand out as significant therapeutic measures within the *Panchakarma* system. Specifically designed for addressing imbalances in *Kapha* and *Pitta doshas*, these therapies utilize drugs with *Tikshna*, *Sukshma* and *Ushna* properties, effectively balancing and eliminating morbid *Pitta*, *Kapha* and *Vata doshas*. Moreover, they aid in the removal of toxins from the body. *Virechana* and *Vamana Karma* are instrumental in managing a range of diseases classified under the umbrella of *Shodhana Chikitsa*.

Dr. Rajendra Garg *et al.*¹⁰ The *Jatharagni* is the source of life and *Oja* and when it is vitiated, ailments arise. *Jatharagni* becomes diminished after *Vamana* and *Virechana*, in such a state of reduced *Jatharagni*, regular food is difficult to digest, hence it is not advised to resume it right after *Samshodhana*. In this scenario, a unique food plan known as *Samsarjana Krama*-which translates to a suitable sequence of *Peya-Vilepi-Krita-akrita Yusha-Krita-akrita Mamsarasa* are followed after the administration of *Vamana Karma* or *Virechana Karma*.

After *Samyak Shuddhi* (proper purification), *Samsarjana Krama* can commence on the same day. Depending upon *Pradhana*, *Madhyama* and *Avar Shuddhi* (purification). *Annakala* are mentioned i.e., in *Pradhana Shuddhi* 3 *Annakala* for 7 days, in *Madhyama Shuddhi* 2 *Annakala* for 5 days and in *Heena Shuddhi* 1 *Annakala* for 3 days of *Peya*, *Vilepi*, *Akrutakruta Yusha*, *Akrutakruta Mamsa Rasa* are been given.¹¹

Every *Samshodhita Purusha* must practice *Samsarjana Krama*, as it will helps to assist in conquering the *Dosha-Dhatukshaya* and restoring the strength of *Jatharagni*, which has been weakened by the purifying process. By setting up such plans, the diet consisting of all the tastes can be served through meals and *Dosha* becomes normal. It also normalizes the *Jatharagni* and *Vayu*, provides nutrition and helps to normalize the body tissues, which are weakened due to *Samshodhana*.¹²

CONCLUSION

Samsarjana Krama is a sequential dietary regimen administered following *Vamana* and *Virechana Karma* (therapeutic emesis and purgation), aimed at enhancing *Jatharagni*, i.e., the digestive power of the body. It is essential for individuals undergoing *Samshodhana* (purificatory) procedures and plays a crucial role in regulating weakened *Jatharagni* caused by the purification process. The advantages of *Samsarjana Krama* include normalizing *Jatharagni* and *Vayu*, offering nourishment and restoring weakened body tissues resulting from *Samshodhana*. The standardized serving size of *Samsarjana Krama* is one of

the unique methods of serving the diet, which maintains the Fasting Blood Sugar (FBS) and Random Blood Sugar (RBS) levels higher than the regular serving group. This method reduces subjective symptoms like headache, cravings for food, giddiness and lethargy, so this standardized dose of *Samsarjana Krama* based on body frame and *Agni* can be adopted in post-*Vamana/Virechana* procedures.

Scope of the study

The present study unveiled a better trend for standardized servings over regular practice, this trend can be still streamlined through in-depth work analysis of individual preparations and newer biochemical analysis.

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ETHICS APPROVAL AND CONSENT TO PARTICIPATE

KAHER/Ethic/2018-19/ID/22

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

ABBREVIATIONS

FBS: Fasting Blood Sugar; RBS: Random Blood Sugar; PPBS: Postprandial Blood Sugar Gr: Group; RS: Regular Serving size; SS: Standardized Serving size.

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