

Research Article

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To evaluate the weight gain efficacy of *Samvardhana Ghritam* in underweight children

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Abstract

Underweight a sub-form of Undernutrition has become an urgent global health issue, because under nutrition killing or disabling millions of children each year. This also prevents million more from reaching their full intellectual and productive potential. Survey conducted by National Nutrition Monitoring Bureau indicates that diet of the Indian Preschoolers is grossly deficient in each and every category of food. In general, the proportion of children with underweight ($< \text{Median} - 2 \text{SD}$) was about 60%, while that of severe underweight ($< \text{Median} - 3 \text{SD}$) was 21%¹. It manifests as wasting, stunting and underweight children. Being underweight according to age in children is the first sign of undernutrition. Underweight means percentile weight for age lies below -2SD . Growing children are most vulnerable to its consequences. Their nutritional status is a sensitive indicator of community health and nutrition².

Principle Management of childhood undernutrition in modern medical science is based on fulfilment of calory and protein requirement according to age. It is not emphasized on digestive power. That's way improvement in this condition is limited, especially in poor digestive condition. *Ayurveda* is a science that dealing with management of any disease based on *Nidana Parivarjana* and *Agni chikitsa*. Therefore, to cure these conditions, "*Brumhanachikitsa*" has been mentioned i.e. along with a balance diet, rich-nutritious supplements that have *Deepana-Pachana* properties³. Which are mentioned in *alpmatra* (less amount). It is described by the *Acharyas* as *Lehana Yoga* for childhood. Thus, to establish the concept of *Karshya* and underweight condition in childhood and evaluate the efficacy of *Samvardhana Ghritam* present study is indented to work on clinical research. We selected this

Keywords

Ayurveda,
Nidana Parivarjana,
Agni Chikitsa,
Brumhanachikitsa,
Deepana
Pachana,
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Karshya,
Samvardhana
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particular *Lehana yoga Samvardhana Ghritam* for clinical trial as *Aacharya Kashyap* mentioned this *Lehanayoga* in *Lehaadhyaya* for proper **growth and development in children**⁴.

Introduction

Ayurveda is the most ancient health science in the world. It is not just a health science but can truly be called as a science of life. *Ayurveda* is a holistic healthcare system and emphasizes on balancing the body, mind and spirit to prevent as well as treat the disease. The initial classics texts of *Ayurveda* described this science to be mainly classified into eight branches on the basis of treated diseases and treatment modalities⁵.

One of the basic principles of *Ayurveda*, *Triupstambha*, considers food to be the basic pillar of the body; that is, food is very essential for the complete life span. This is the first basic need for the growth and development of the body. Growth and development occur very rapidly during childhood, which depends on diet. Therefore, the diet at this age should contain appropriate amounts of all the nutrients. Hence, the quality of food should be ensured for its calorific value. *Ayurvedic* literature explains that *alpa-bhojanata*, *asamyaka -bhojnata* result in *alpaposhanam* or *Kuposhana*⁶ and its progressive manifestations fall under the umbrella of diseases such as ***Karshya***, ***Phakka Roga***, ***Balshosha***, and ***Parigarbhika***, known as ***Kuposhanajanyavyadhi*** in childhood.

Acharya charaka has mentioned the *Ahaara-saushthava* is a most important *Shaarira-vriddhikar bhava*⁷.

Samprapti is the most important part of defining the disease as per the *Ayurvedic* text. *Charaka Samhita* has considered various aspects of children, in his opinion, the *Dosha* and *Dushya* are the same in young and children's and most of the diseases are also common, except few which are exclusively found in children or their incidences are higher in this age⁸.

According to *Charak Samhita Vimansthana Triukshiyadhyaya*, there are two types of *Amatra of Ahaara - Heena* and *Adhika Ahaaramatra*. Intake of food in less quantity is a cause of *Bala*, *Varna* and *Sharir Vriddhi Kshaya*. It is also the cause of *Ashta Sara Kshaya* and gives rise to *various disorders* of *Vata Dosha*. This is actually the *samprapti* of under nutrition, if *Heenmatraahaara* seven continue for a longer period and child's *Bala* and *Dhatu sara* are deficient with *vitiation of Vata Dosha* then *Kuposhanajanyavyadies* developed (Malnutritional syndroms)⁸.

Extreme *Karshya* (emaciation) results from those who engage in *Vata-promoting* diets, excessive physical activity, excessive ejaculation, lengthy study sessions, fear, anxiety, waking during the night, increase thirst and hunger, taking astringents, partial starvation, etc. These activities cause the circulation of *Rasa Dhatu* (digestive chyle) to be reduced, which in turn causes the *Uttarottara Dhatu* (tissues) to become inadequately nourished. The indulgence in *Vatavardhaka Ahar Vihar* result in the vitiation of *Vata dosha* by effect of its *Ruksha*, *Laghu* and *Khar Guna*. Vitiated *Vata* leads to *Agnidusthi* (*Vishamagni*), which results inappropriate digestion due to sometimes *Madnagni* and sometimes *Tikshagni*. Inappropriate *AharaRasa* is formed due to improper digestion and absorption, and the person gets emaciated. After that, the undernourished *Rasa Dhatu* circulates throughout the whole body; all the *Uttorottar-Dhatu*s (tissues) do not get properly nourishment, which leads to *Dhatukshaya*. These kinds of people become *Atikrish* (emaciated)⁹.

Ayurveda classifies nutritional requirements and diet regimens by factors like *Doshaprakriti*, *Agni* (digestive power), *Kala* (seasons), geographical habitat and stage of growth from childhood through old age. *Ayurvedic* dietetics recommend

nourishing, easy-to-digest foods tailored to one's constitution and ability to metabolize. Light, warm, unctuous foods kindle Agni and get assimilated into *Dhatus* (tissues) to build *Ojas* (vitality). Heavy, dry, cold, stale or unwholesome foods lead to accumulation of *Ama* and derangement of Agni and *Dhatus*.

Acharya Kashyapa described specialized nutraceuticals called *Lehya Kalpas* for children. *Lehyas* like *Samvardhana Ghritam* mentioned in *Kashyap Samhita* is high-nutrition dense preparations combining synergistic ingredients that balance all tissues, kindle Agni, nourish *Dhatus* and boost immunity, cognition and growth as per the Ayurvedic principles of *Brumhana*¹⁰.

Properties of contents of research Drug:

<i>Ingredients</i>	<i>Rasa</i>	<i>Guna</i>	<i>Veerya</i>	<i>Vipaka</i>	<i>Dosakarma</i>
<i>Khadira</i>	<i>Tikta, Kashaya</i>	<i>Laghu, Ruksha</i>	<i>Sheeta</i>	<i>Katu</i>	<i>Pitta-Kapha Shamaka</i>
<i>Prishnaparni</i>	<i>Madhura, Tikta</i>	<i>Laghu, Snigdha</i>	<i>Ushna</i>	<i>Madhura</i>	<i>Tridosha Shamaka</i>
<i>Syandana</i>	<i>Kashaya</i>	<i>Laghu, Ruksha</i>	<i>Sheeta</i>	<i>Katu</i>	<i>Kapha-Pitta Shamaka</i>
<i>Bala</i>	<i>Madhura</i>	<i>Laghu, Snigdha, Pichchhila</i>	<i>Sheeta</i>	<i>Madhura</i>	<i>Vata-Pitta Shamaka</i>
<i>Atibala</i>	<i>Madhura</i>	<i>Laghu, Snigdha, Pichchhila,</i>	<i>Sheeta</i>	<i>Madhura</i>	<i>Vata-Pitta Shamaka</i>
<i>Kebuka</i>	<i>Tikta, Kashaya</i>	<i>Laghu, Ruksha</i>	<i>Sheeta</i>	<i>Katu</i>	<i>Kapha-Pitta Shamaka</i>
<i>Saindhav</i>	<i>Lavana</i>	<i>Laghu, Snigdha</i>	<i>Sheeta</i>	<i>Madhura</i>	<i>Tridosha Shamaka</i>
<i>Kshira</i>	<i>Madhura</i>	<i>Snigdha</i>	<i>Sheeta</i>	<i>Madhura</i>	<i>Vata-Pitta Shamaka</i>
<i>Ghrita</i>	<i>Madhura</i>	<i>Snigdha</i>	<i>Sheeta</i>	<i>Madhura</i>	<i>Pitta-Vata Shamaka</i>

Material and Methods

Method of data collection- After the completion of treatment, the assessment was done on the same criteria as before the treatment and scoring was done on the same pattern. The different tables of scores, obtained before treatment and after treatment, is prepared for the comparison and statistical analysis was done.

Study Design:

Type of study- Single Blind Randomized Control Clinical Trial.

Period of study – 2 years

Duration of treatment- 90 days

Selection of patient- Patients with classical features of *Karshya*(Underweight) attending the OPD and IPD of Postgraduate Balrog Department of Rishikul Ayurvedic Campus Hospital, UAU, Haridwar, Uttarakhand were selected for the proposed clinical study, irrespective of sex, religion and socio-economic status.

Sample size: Total 312 patients were divided in two groups i.e.156 patients were registered in Group A and 156 patients were registered in Group B for the clinical trial.

Inclusion criteria: Parents of child willing for the clinical trial, age group of 1 to 5 years irrespective of gender, caste, religion and socio-economic condition, children diagnosed as Underweight (Low weight for age) and those fulfilling the diagnostic criteria of IAP for Malnutrition of Grade I, Grade II.

Exclusion criteria: children below the age of 1 year and above 5 years, according to IAP classification more than 80% (normal) & less than 61% of expected weight (PEM grade 3 & 4) were excluded, Malnutrition with oedema and patient

associated with systemic infections and other disorders like tuberculosis, HIV. Known case of congenital & hereditary problems related to poor weight gain, neurological & endocrine disorders, anatomical defects, cerebral palsy, nephrotic syndrome, malabsorption syndrome, malignancies.

Criteria for withdrawal: Aggravation of symptoms, Inter-current illness, Child's Parent not willing to continue treatment and Leave Against Medical Advice.

Assessment criteria:

On the basis of subjective parameters¹¹:

Parameter	Grade 0	Grade 1	Grade 2	Grade 3
<i>Daurbalya and Mandchesta</i>	Active and playful	Active and playful on active commands	Feeling tired after some physical activity	Feeling very tired after some physical activity
<i>Aruchi</i>	Normal appetite with normal diet intake	Child asks for food but not take adequately	Reduced appetite (reluctant to food)	Marked reduced appetite (reluctant to food considerably even by force)
<i>Dhamani Jaal santata</i>	Not visible easily	Visible on pressure	Visible without pressure	Visible & prominent without pressure
<i>Shushyati</i>	Weight as expected to age	Weight >80% of expected weight	Weight b/w 80% - 70% of expected weight	Weight between 70% - 60% of expected weight
<i>Nidra</i>	Adequate duration and sound sleep	Short but sound sleep	Short and disturbed sleep for short duration.	Short and disturbed sleep for long duration.
<i>Sthoola Parva</i>	Deeply seated with normal fat	Covered	Prominent	Relatively look larger
<i>Mala Vibandhata</i>	Normal in frequency and consistency.	Daily but hard in consistency.	Stool passed on one day interval with hard in consistency	Irregular,>2 days interval with hard in consistency.

On the basis of objective parameters

Anthropometry measures	Biochemical investigation
Primary) Weight For Age (WFA) (in kg) Secondary) Height For Age (HFA) (in cm)) Mid upper arm circumference (MUAC) (in cm)) Body Mass Index (BMI)=kg/m ²	• Hb%

Investigation: Complete Blood Count (CBC) & Liver Function Test (LFT).

Method of Treatment:

Group design

Groups	Registered Patients	Completed Treatment	Module	Duration
A	156	142	<i>Samvardhana Ghritam</i> with wholesome diet	60 days.
B	156	137	<i>Go-Ghritam</i> with wholesome diet	60 days.

Out of 312 patients, only 279 patients could complete their treatment. 14 from group 'A' and 19 from group 'B' i.e. total 33 patients had left against their medical advice. Hence, the final assessment of the result was done only in 279 patients.

Selected Drug: *Samvardhana Ghritam* for Group A and for Group B was *Go-Ghritam*.

Form of Medicine: *Sneha Kalpana (Ghritam)*

Composition of the drug- *Khadira, Prishniparni, Syandana, Bala, Atibala, Kebuka, Saindhav, Kshira, Ghrita, Jala*¹³.

Properties of *Samvardhana Ghritam* -In *Samvardhana Ghrita* there was predominance of *Madhura rasa* followed by *Tikta rasa, Laghu and*

Snigdha Guna, Shita veerya, Madhura vipaka and is *tridoshshamaka*.

Dose of the medicine - Dose is calculated by using Young's Formula:

$$\frac{\text{Age}}{\text{Age}+12} \times \text{Adult Dose}$$

Route of administration - oral

Procedure -*Ghritam (Samvardhana Ghritam and Go Ghritam)* has to be taken with *Madhu* as *Sahpana* in the ratio is 2:1 (*Asamanya Matra*), in *Kshudha Kaal* (empty stomach), once a day under the Parent's supervision.

Sahpaan- *Madhu*¹⁴ (Honey)

Statistical analysis - After completion of treatment, assessment is done on the same criteria as before treatment and scoring is done on the same pattern. Separate tables of scores obtained before and after treatment were prepared for comparison in Ordinary scale (Gradation). Primary and secondary end points were analysed as average change in the response from baseline.

To obtain the efficacy of the therapy, proper statistical analysis was carried out of available data by applying Wilcoxon Signed Rank test for subjective criteria and Paired t-test for objective parameters. Inter group comparison, Mann Whitney U test for subjective variables and Unpaired t-test for objectives variables.

Observations and Results

Effect of therapy on subjective parameters

Group A

Group A (Subjective)	Mean		Median		S		D	Wilcoxon W	P-Value	% Effect	Result
	BT	AT	BT	AT	BT	AT					
<i>Daurbalya</i>	1.24	0.36	1.00	0.00	0.83	0.48	-10.247 ^b	0.00000012	71.02	HS	
<i>Aruchi</i>	1.19	0.31	1.00	0.00	0.81	0.46	-10.410 ^b	0.00000222	73.96	HS	
<i>Malavibandhata</i>	0.63	0.12	1.00	0.00	0.67	0.33	-8.429 ^b	0.00034770	81.11	HS	
<i>Dhamnijasantata</i>	1.06	0.22	1.00	0.00	0.60	0.41	-10.909 ^b	0.00000010	79.33	HS	
<i>Shushyati</i>	1.37	0.31	1.00	0.00	0.67	0.46	-11.357 ^b	0.00000688	77.44	HS	
<i>Nidra</i>	0.99	0.22	1.00	0.00	0.82	0.41	-9.621 ^b	0.00000065	77.86	HS	
<i>Sthoola parva</i>	0.84	0.17	1.00	0.00	0.50	0.38	-9.747 ^b	0.00000019	79.83	HS	

Since observations are on ordinal scale (gradations), we have used Wilcoxon Signed Rank Test to test efficacy in Group A. From above table, we can observe that, P-Value for all

parameters is less than 0.001. Hence, we can conclude that, effect observed in Group A is Highly significant.

Group B

Group B (Subjective)	Mean		Median		SD		Wilcoxon W	P-Value	% Effect	Result
	BT	AT	BT	AT	BT	AT				
<i>Daurbalya</i>	1.29	0.91	1.00	1.00	0.78	0.47	-7.280 ^b	0.00033355	29.94	HS
<i>Aruchi</i>	0.84	0.58	1.00	1.00	0.57	0.49	-5.444 ^b	0.00052218	30.43	HS
<i>Malavibandhata</i>	0.76	0.52	1.00	1.00	0.60	0.50	-5.745 ^b	0.00092159	31.73	HS
<i>Dhamnijasantata</i>	0.88	0.61	1.00	1.00	0.46	0.49	-5.840 ^b	0.00052210	30.00	HS
<i>Shushyati</i>	1.23	0.81	1.00	1.00	0.47	0.43	-6.766 ^b	0.00001320	34.32	HS
<i>Nidra</i>	1.09	0.74	1.00	1.00	0.81	0.51	-5.930 ^b	0.00030255	31.54	HS
<i>Sthoola parva</i>	0.83	0.55	1.00	1.00	0.46	0.50	-5.565 ^b	0.00262515	33.33	Sig

Since observations are on ordinal scale (gradations), we have used Wilcoxon Signed Rank Test to test efficacy in Group B. From above table, we can observe that, P-Value for all

parameters is less than 0.001. Hence, we can conclude that, effect observed in Group B is highly significant except *Sthula parva*.

Comparison between Group A & B (Subjective Criteria)

Variable	Group	N	Mean Rank	Sum of Ranks	Mann-Whitney U	P-Value
<i>Daurbalya</i>	Group A	142	170.55	24217.50	5389.500	0.0000
	Group B	137	108.34	14842.50		
	Total	279				
<i>Aruchi</i>	Group A	142	179.75	25524.00	4083.000	0.0000
	Group B	137	98.80	13536.00		
	Total	279				
<i>Malavibandhata</i>	Group A	142	158.35	22485.50	7121.500	0.0000
	Group B	137	120.98	16574.50		
	Total	279				
<i>Dhamni Jala Santata</i>	Group A	142	179.49	25487.00	4120.000	0.0000
	Group B	137	99.07	13573.00		
	Total	279				
<i>Shushyati</i>	Group A	142	180.28	25600.00	4007.000	0.0000
	Group B	137	98.25	13460.00		
	Total	279				
<i>Nidra</i>	Group A	142	167.04	23720.00	5887.000	0.0000
	Group B	137	111.97	15340.00		
	Total	279				
<i>Sthoola Parva</i>	Group A	142	167.49	23783.50	5823.500	0.0000
	Group B	137	111.51	15276.50		
	Total	279				

Mann Whitney U test is carried out for comparison between Group A and Group B. From above table, we can observe that, P-Value for all parameters is less than 0.05. Hence, we can conclude that, there is significant difference

between Group A and Group B. Further, we can observe that, mean rank for Group A is greater than Group B. Hence, we can conclude that, effect observed in Group A is better than Group B.

Effect of therapy on objective parameters

Group A

Group A (Objective)		Mean	N	SD	SE	t-Value	P-Value	% Change	Result
Weight	BT	12.79	142	2.84	0.24	-4.823	0.001	7.50	Sig
	AT	13.75	142	3.75	0.32				
Height	BT	99.62	142	13.18	1.11	1.712	0.089	0.37	NS
	AT	99.98	142	19.46	1.63				
MAC	BT	12.63	142	2.04	0.17	0.790	0.431	1.23	NS
	AT	12.48	142	2.58	0.22				
BMI	BT	12.92	142	1.73	0.15	-6.619	0.001	8.79	Sig
	AT	14.05	142	2.84	0.24				
Hb	BT	10.84	142	1.89	0.16	-3.403	0.001	2.64	Sig
	AT	11.13	142	2.20	0.18				

Since observations are quantitative, we have used paired t-test to test significance in Group A. From above table, we can observe that, P-Value for

Weight, BMI and Hb is less than 0.001. Hence, we can conclude that, effect observed in Weight, BMI and Hb is highly significant in Group A.

Group B

Group B (Objective)		Mean	N	SD	SE	t-Value	P-Value	% Change	Result
Weight for Age	BT	12.43	137	2.34	0.20	0.737	0.462	0.65	NS
	AT	12.35	137	2.55	0.22				
Height for Age	BT	92.56	137	8.92	0.76	-1.000	0.319	0.01	NS
	AT	92.57	137	8.92	0.76				
Mid Arm Circumference	BT	13.05	137	6.94	0.59	1.000	0.319	4.55	NS
	AT	12.46	137	0.66	0.06				
BMI	BT	14.51	137	1.41	0.12	-1.000	0.319	0.01	NS
	AT	14.51	137	1.41	0.12				
Hb	BT	11.43	137	1.25	0.11	-3.395	0.001	1.11	Sig
	AT	11.56	137	1.25	0.11				

Since observations are quantitative, we have used paired t-test to test significance in Group B. From above table, we can observe that, P-Value for Hb

is less than 0.05. Hence, we can conclude that, effect observed in Hb is significant in Group B.

Comparison between Group A & B (Objective criteria)

Variable	Group	N	Mean Diff	SD	SE	t-Value	P-Value	Result
Weight	Group A	142	1.302	0.550	0.046	26.195	0.000	Sig
	Group B	137	0.055	0.091	0.008			
Height	Group A	142	0.040	0.168	0.014	1.473	0.142	NS
	Group B	137	0.012	0.145	0.012			
Mid Arm Circumference	Group A	142	0.075	0.157	0.013	-0.890	0.374	NS
	Group B	137	0.593	6.946	0.593			
BMI	Group A	142	1.389	0.689	0.058	23.566	0.000	Sig
	Group B	137	0.001	0.009	0.001			
HB	Group A	142	0.365	0.257	0.022	15.834	0.000	Sig

Unpaired t-test is carried out for comparison between Group A and Group B. From above table, we can observe that, P-Value for Weight, BMI and Hb is less than 0.05. Hence, we can conclude that, there is significant difference between Group A and Group B.

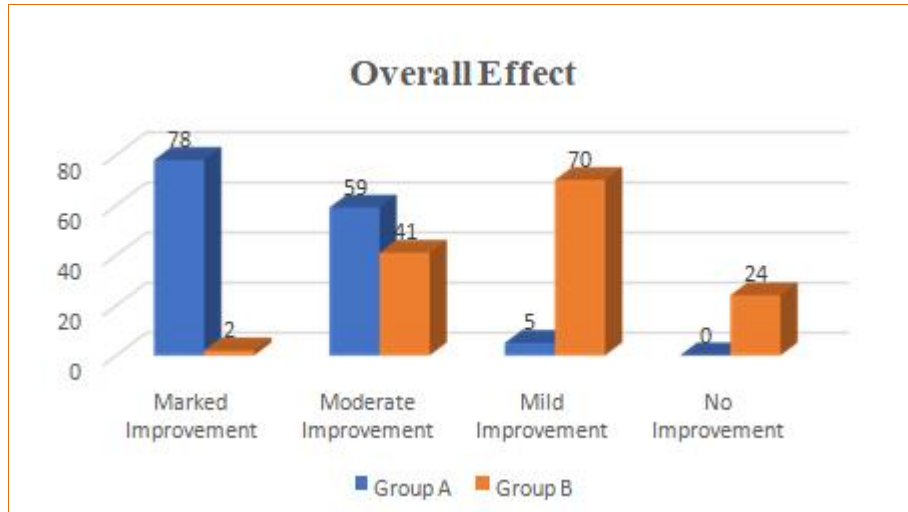
Further, we can observe that, mean difference for Group A is greater than Group B. Hence, we can conclude that, effect observed in Group A is better than Group B.

Total effect of treatment module:

Overall Effect	Group A		Group B	
	N	%	N	%
Marked Improvement	78	54.93%	2	1.46%
Moderate Improvement	59	41.55%	41	29.93%
Mild Improvement	5	3.52%	70	51.09%
No Improvement	0	0.00%	24	17.52%
TOTAL	142	100.00%	137	100.00%

The overall effect of treatment module showed marked improvement in 78 patients (54.93%) in Group A, marked improvement was seen in 02 patients (1.46%) in Group B. Moderate improvement was found in 59 patients (41.55%) in Group A and 41 patients (29.93%) in group B.

there was mild improvement in 05 patients (3.52%) Group A, while there was mild improvement in 70 patients (51.52%) in Group B. No improvement was found in 24 patients (17.52%) in Group B.



Discussion

The main cause of *Karshya* is in children, food intake in less quantity (*Heenamatra Ahaarasevana*) for a longer period with vitiation of *vata-dosha*. These causes further decrease the digestive fire i.e. *Agnimandhya*. This *Agnimandhya* forms *Ama* in body channels and causing their obstruction which is called *Strotorodha*. This *Strotorodha* dries up the *Rasa Dhatu* (*upshoshit Rasa dhatu*) which further debilitate progressive *Dhatus* and cause *Karshya*. *Samvardhan Ghritam* acts upon this process and relieves *Karshya*. *Samvardhana Ghritam* is a specialized nutraceuticals *Lehya Kalpas* for children, have high-nutrition dense preparations combining synergistic ingredients that balance all tissues, kindle *Agni*, nourish *Dhatus* and boost immunity, cognition and growth as per the Ayurvedic principles of *Brumhana*. *Samvardhana Ghritam* contains nine ingredients most of the ingredients having *Tikta*, *Kashaya* and *Madhura Rasa*, *Laghu-Snigdha Guna*, and *Madhura Vipaka* which are kindle *Agni*, *Shrotoshodhaka* and *Santarpaniya*. *Snigdha Guna*, nourish the all *Dhatus*¹⁵.

Samvardhana Ghritam becomes *Swadu*, *patu*, *Kashyaya Rasa*, *Guru*, *Snigdha Guna*, *Madhura Vipaka*¹⁶ which are contrary to the Properties of balancing *Vata-Kapha Dosha* and *Shrotoshodhaka*, *Laghu-Santarpaniya*. The lipophilic action of ghee facilitates transportation

to the target organ and final delivery inside the cell via the cell membrane which also contains lipids¹⁷. *Go-dugdha* has *Madhura Rasa*, *Guru* and *Snigdha Guna*, *Sheeta Veerya*, *Madhura Vipaka*, *Vata-Pitta Shamaka* *Doshakarma*¹⁸. The pharmaco-therapeutic properties are *Balya*, *Brimhaniya*, *Rasayana*, *Sandhanakara*, and *Medhya*¹⁹.

Proper digestion, absorption and delivery to the target organ system are very important for obtaining the maximum benefit from any therapeutic formulation. According to *Kashyap Samhita*, *Samvardhana Ghritam* is taken along with *Madhu* (Honey)²⁰. *Madhu* has *Madhur Rasa*, *Kashaya Anurasa*, *Laghu*, *Ruksha* and *Vishada Guna*, *Ushana Virya* and *Madhura Vipaka*²¹. According to *Acharya Sushruta*, *Madhu* balanced vitiated *Tridosha*. It is the best *Yogavahi* substance²¹. It means it carry the effects of the drugs added to it, enhance the properties and actions of the substances with which it combines. It acts as a catalyst and helps to deliver medicines to the target area at a faster pace. *Madhura Rasa*, *Ushna Veerya*, *Snigdha Guna* of *Prishanaparni*, *Saindhav*, *Bala*; *Karma* like *Vaatshaman* of *Atibala*, *Prishanaparni*, *Bala*, *Go-ghrita* and *Go-dugdha* balanced *Vatavidhi*. To kindle depleted *Agni*, properties like *Laghu Guna*, *Tikta* and *Kashya Rasa*, *Ushna veerya*, *KatuVipaka* of *Syandana*, *Khadira* and *Karma* like *Agnivridhi*, *Deepana* and *Roochikara* properties of *Saindhav* increases digestive fire (*Jathargani Vridhi*).

Other properties like *Laghu*, *Teekshana*, *Rooksha*, *Sookshma Guna* and *Ushna veerya* and *Raktashodhaka* property of *Khadira* and *Syanadana* opens obstructed channels and *Madhura Rasa*, *Madhura Vipaka* and *Sheeta Veerya* along with *Balya* and *Bringhna* property of *Go-dugdha*, *Go-ghrita*, *Bala* and *Atibala* increase depleted *Rasa Dhatu*. Progressive *Dhatu*s are nourished by *Rasayana*, *Dhatuwardhaka*, *Balya*, *Ojjavardhak* properties of *Bala*, *Go-dughda* and *Go-ghrita*. All these actions may remove the causative factor of the *Karshya* and might have increased the weight.

Conclusion

The study indicates that oral administration of *Samvardhana ghritam* along with a wholesome diet is more effective in promoting weight gain compared to the administration of *Go-ghritam* with a wholesome diet. Group A, which received *Samvardhana ghritam*, demonstrated significantly better subjective outcomes compared to Group B. Objective parameters such as weight, BMI, and Hb (hemoglobin) also showed significant differences between Group A and Group B, with Group A exhibiting better results. The study suggests that the ingredients of *Samvardhana ghritam* enhance the properties of *Go-ghritam*, leading to improved growth velocity and weight gain in underweight children. This research provides valuable insights into combating undernutrition in childhood and contributes to the achievement of targets. However, further studies are recommended with larger sample size to evaluate the efficacy of *Samvardhana ghritam* in Grade III and IV undernutrition cases and explore age-independent criteria such as stunting and wasting.

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