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A randomized comparative clinical study to evaluate the effect of *Ghanavyoshadi Khanda* over *Vidarikandadi Khanda* in *Karshya* w.s.r. to Underweight Children

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ABSTRACT

Background: Undernutrition is one of the major causes of increased morbidity & mortality among children. One of the most emerging issues in the present scenario is having long-term effects on physical & cognitive development. Underweight is one of the cardinal determinants of under nutrition. According to a 2019 report, India is ranked 102 out of 119 countries. As per NFHS 4 in India shows 35.7% under 5 children were underweight, 38.4% were stunted & 21% were wasted. *Karshya* is an *Apatarpana Janya Vyadhi*. The trial was proposed to study the comparative effect of *Ghanavyoshadi Khanda* & *Vidaryadi Khanda* by using specific parameters for *Karshya* w.s.r. to underweight. **Objective:** To evaluate the comparative effect of *Ghanavyoshadi Khanda* over *Vidarikandadi Khanda* in the management of *Karshya*. **Materials & Methods:** Children of age group 2-5 years were selected from Kaumarabhritya OPD of SDM College of Ayurveda & Hospital, Udupi, also from nearby Anganwadi's & preschool of Udupi. Selected subjects were randomly allocated into 2 groups of 15 patients each. Group A will be administered with *Ghanavyoshadi Khanda* along with *Sukoshna Ksheera* as *Anupana* twice daily before food and group B with *Vidarikandadi Khanda* along with *Sukoshna Ksheera* as *Anupana* twice daily after food for 1 month. **Results:** Children showed improvements in all aspects of *Karshya* w.s.r. to underweight like weight, height, MUAC, & BMI. Both the groups showed highly significant improvement in *Kshut*, *Abyavara Sakti* & significant changes in *Badhavitt*. Insignificant changes in *Alpapranaschakriya*, *Pipasa* & *Nidra*. **Conclusion:** It was concluded clinically the consumption of *Ghanavyoshadi Khanda* & *Vidaryadi Khanda* along with *Sukoshna Ksheera* are equally effective in the management of *Karshya* w.s.r. to underweight in children.

Key words: Undernutrition, *Ghanavyoshadi Khanda*, *Vidaryadi Khanda*, *Karshya*, Underweight

INTRODUCTION

Ayurveda, the *Vedic* science deals with preventive & curative measures which promote a healthy long life. *Kaumarabhritya*, one of the branches of *Astanga*

Ayurveda deals with complete nutrition as well as the health of child.^[1] Growth is a fundamental character & an indicator of optimum health of child.^[2]

Nutrition is the process by which living organisms assimilate food & use it for growth, metabolism & replacement of tissues. Food is considered the foundation of good health & disease-free life. Human growth & development require both nutritional & psychosocial support. The body is nourished by 3 processes digestion, absorption & transport. Mechanical digestion by mastication & movement of food to GIT by peristalsis; chemical digestion by enzymatic action. Absorption involves the passage of food nutrients from the intestine to the mucosal lining of the intestinal wall. The absorbed nutrients are transported throughout the body by blood circulation.^[3]

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Adequate food & nutrition are essential for proper growth & development, optimum work capacity, normal reproduction, adequate immunity & resistance to infection.^[4] Good health depends on adequate food supply which depends on sound agricultural policy, food distribution & proper health education. A solid healthy youth with a developed body, mind & brain in the basement for a great future.^[5]

Undernutrition is one of the most widespread health & nutrition problems. It causes disease & disability in children that prevents them from reaching full intellectual & productive potential.^[6] *Ayurveda* explains multiple diseases which occur due to derangement in the multiple developing systems of a child under the heading of *Kuposhanajanya Vyadhi*. This can be described under these heading – *Dushta Stanyapana Janya Vikaras, Garbhaja Phakka Roga, Vyadhija Phakka, Parigarbika, Karshya*. All these conditions finally lead to failure in growth & development. The child fails to acquire locomotor stability with inadequate neuromuscular coordination.

Underweight is one of the cardinal determinants of under nutrition. It means the children who are malnourished but don't possess any symptoms of kwashiorkor & marasmus or the weight of child less than -2 standard deviation at her/ his age on the WHO growth chart. Due to a complex interplay of interacting & related factors in the individual, family & community like poverty, ignorance, illiteracy, early weaning, poor hygiene, maternal malnutrition, high birth rate, and inadequate medical facilities.^[7]

Undernutrition is a widespread health problem having international consequences because it is an essential determinant of wellbeing. In India, childhood under nutrition is an underlying cause of 45% of all death among under 5 children. According to a rapid survey of children- in 2014 about 29% of Indian children are underweight.^[8] According to NFHS (2015-2016) survey, about 36% of Indian children are underweight.^[9] The Global Hunger Index -2017 reported by the International Food Policy Research Institute, in which India is ranked 100th out of 119, shows a very low state of hunger.^[10]

Pre-school age is a dynamic period of physical development as well as mental development of the child. The mortality rate in this age group is significantly high due to increased susceptibility to infection, frequent episodes of illness & longer recovery period.^[11] The risk of under nutrition is more in 2 years of life because they are weaned from the breast & mother loses the ability to produce enough milk to maintain the nutrient demand of a growing child.

Ayurveda considers *Ahara, Nidra, and Bramacharya* as the 3 supporting pillars of the body throughout its lifetime by providing *Bala, Varna, and Upachaya*.^[12] Out of this *Ahara* is given the foremost & prime importance. It is said to be the life of all living beings. *Acharya Kashyapa*, considers *Ahara as Mahabhaishajyam*, which is responsible for the growth, development, and enhancement of *Ojas*.^[13] *Acharya Vagbatta* opines consumption of *Alpamatra Ahara* will lead to *Vata Vikaras, Ojonasha*.^[14] Food is the cause of stability for all living beings. Proper maintenance of the power of digestion also depends on the proper diet. *Bala, Arogya, Ayu, and Prana* are totally dependent on *Agni*.^[15] Proper metabolism of *Annapana* act as fuel for the *Jwalana of Agni*.

As per contemporary science, diet modification is the only way to manage underweight children. Our *Acharyas* have stressed the properties of drugs possessing *Deepana, Pachana & Vatanulomana* as per the treatment & also explained various medical formulations possessing the same properties which improve the appetite, proper digestion & assimilation of the ingested food in the children thereby balancing the nutritional requirements, immunity thus enhancing the overall health. *Ayurveda* put forth the measures to improve the *Vyadhikshamatatawa* like *Rasayana, Lehana, Stanya, Samskaras, Jeevaniya, Balya, Vayastapana, Hitahara upayoga, Deepana, Pachana* drugs.

Hence, the present study intends to evaluate the effect of *Ghanavyoshadi Khanda & Vidarikandadi Khanda* in underweight children, as the drugs are having the *Deepana, Pachana & Vatanulomana* properties it will improve the digestive capacity, helps in assimilation &

absorption of food. The ultimate aim of the study is to improve the digestive thereby improving body weight.

OBJECTIVES

1. To evaluate the effect of *Ghanavyoshadi Khanda* in the management of *Karshya*
2. To evaluate the effect of *Vidarikandadi Khanda* in the management of *Karshya*.
3. To evaluate the comparative effectiveness of *Ghanavyoshadi Khanda* over *Vidarikandadi Khanda* in the management of *Karshya*.

MATERIALS AND METHODS

Source of data

Children of age group 2-5 years, were selected from *Kaumrabhritya* OPD of SDM College of Ayurveda & Hospital, Udupi, also from nearby Aganwadi's & preschool of Udupi.

Study design

An open-labelled double-arm prospective clinical study with pre-test & post-test design.

Method of collection of data

30 children were randomly divided into 2 groups, Group A – *Ghanavyoshadi Khanda* (study group) & group B- *Vidaryadi Khanda* (control group) with 15 children each.

Inclusion criteria

- The children of either gender between the ages of 2-5 years.
- Weight of child less than expected as per the age i.e., Grade 1 (71-80%) and Grade 2 (61-70%) according to IAP classification of Malnutrition.
- Clinically stable children having 2 or more symptoms mentioned under diagnostic criteria.
- BMI of 15-18.5%.

Exclusion criteria

- Children with Grade 3 (51-60%) and Grade 4 (<50%) malnutrition.

- Children having other acute & chronic systemic illnesses or requiring emergency management.
- Children with developmental disorders like cerebral palsy, intellectual disability etc.
- Children with an inborn error of metabolism, congenital abnormalities.
- Children with neurobehavioral disorders like ADHD, autism etc.

Assessment criteria

Subjective criteria^[16]

- 1) *Kshut* (state of hunger)
- 2) *Abhyavarana Shakti* (capacity to eat)
- 3) *Alpapranacha Kriya* (interest in activities)
- 4) *Baddhavit* (irregular bowel habits)
- 5) *Pipasa* (thirst)
- 6) *Nidra* (sleep)

Objective criteria

1) Anthropometric Parameters

- Weight (in kg)
- Height (in cm)
- Mid arm circumference (in cm)
- Chest circumference (in cm)

2) BMI

Intervention

Drug - *Ghanavyoshadi Khanda* & *Vidaryadi Khanda*

Drug source - GMP certified SDM Pharmacy, Udupi.

Collection & Standardization of raw drug - The ingredients were obtained from S.D.M Pharmacy. Macroscopy, microscopy & HPTLC of the ingredients were done at Sri Dharmastala Manjunatheshwara centre for research in Ayurveda & allied science, Udupi.

Dose - Dose is fixed by considering the age & adult dose, by applying young's formula.

For a 2- year child- 4 g twice daily

For a 3-year child- 5g twice daily

For a 4-year-old child- 6 g twice daily

For a 5-year-old child- 7 g twice daily

Anupana - *Sukhoshana Ksheera* was advised as *Anupana*.

Duration of study - Total duration of study is 2 month, 1 - month intervention next month follow up.

Period of Assessment

The child was assessed before treatment (day 0), after treatment (day 30) & followed by follow-ups on 60th day.

Statistical methods - Statistical analysis was carried out using the statistical package for social science (SPSS) VER.20.

OBSERVATIONS

Among 30 children, 44% of children belong to the 4-5 age group can be due to schooling & were more exposed to the sources of infections and allergens which may negatively impact their health status. 96% of children had reduced appetite; due to *Nidana, Agni* has hampered. So, the craving for food will be reduced. Refusal of food is an indicator of the status of *Agni*. 93.3% of subjects were poorly built. *Krishata* is the result of *Shoshana* of *Rasadhatu* causing *Shoshana* of *Mamsa Dhatu* in the *Sareera*. Most of the subject (53.5%) in the study suffers from altered bowel habits. It can be due to low quality & quantity of food, low fibre content food and poor sanitation & drinking facilities. 21 (70%) subjects had a history of previous illness / hospitalization. Research explains underweight is associated with impaired gut functions, low level of plasma component, atrophied thymus etc.^[17] Hence, they will be prone to infections. 92% of children were consuming food in *Hina Matra*. *Acharya* has quoted that *Hina Matra Ahara* can lead to different types of *Vata Vikaras* & ultimately hampers *Bala* & *Ojas*. 24 (80%) had already taken deworming medicine before the study. The study reveals that maybe worm infestation was not the main pathology behind under nutrition. 3 (10%) mothers had a history of infection/disease- a history of vaginal infection, gestational diabetes, and anaemia. 9 (30%) subjects' mothers were

moderately nourished. They have reported a deficiency of iodine, iron & folate. Out of this, 5 subjects were premature, with low-birth-weight babies, with a history of long hospital stay. 8 (26.6%) children were SGA; the majority of the children were born healthy and later they developed *Karshya*, therefore, the *Dosha Balapravrta* factor has played a larger part than the other factors. Only 4 subjects were given top feeds in initials of birth due to some maternal illness, reduced milk production & caesarean section. 26 are breastfed in this study, it does not have an impact on *Karshya*. Early initiation of breastfeeding will act as a complete nutrient to the baby, provide warmth, promote bonding, prevents hypoglycaemia & hypothermia, increases the level of antibodies, immunity etc. Weaning age plays a crucial role in being underweight. Among 30 children, 2 (6.6%) children in the 5th month 14 (46.6%) children in the 6th month, 5 (16.6%) in the 7th month, 7 (23.3%) in the 8th month & 2 (6.6%) children on 9th month. Early & late introduction of complementary feeds reflects in under nutrition.

RESULTS

Effect of treatment on Subjective parameters

Within the group

1. Kshut

Table 1: Shows effect of Kshut within the groups

Parameter	Negative Ranks			Positive Ranks			Ties	Total	Z value	P-value	Inference
	N	M	S	N	M	S					
Ghanavyoshadi Khanda											
BT-AT	15	8	10	0	0	0	0	15	-3.53	0.00	HS
BT-FU	15	8	10	0	0	0	0	15	-3.53	0.00	HS
Vidaryadi Khanda											
BT-AT	15	8	10	0	0	0	0	15	-3.50	0.00	HS

BT-FU	15	8	120	0	0.0	0.0	0	15	-3.58	0.00	HS
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2. *Abhyavaharana Sakti*

Table 2: Shows the effect of *Abhyavaharana Sakti* within the groups

Parameter	Negative Ranks			Positive Ranks			Ties	Total	Z value	P-value	Inference
	N	M	S	N	M	S					
Ghanavyoshadi Khanda											
BT-AT	10	55	55	0	00	00	5	15	-3.16	0.00	S
BT-FU	10	55	55	0	00	00	5	15	-3.16	0.00	S
Vidaryadi Khanda											
BT-AT	3	2	6	0	00	00	12	15	-1.7	0.083	S
BT-FU	3	2	6	0	00	00	12	15	-1.7	0.083	S

3. *Badhavitt*

Table 3: Shows the effect of *Badhavitt* within the group

Parameter	Negative Ranks			Positive Ranks			Ties	Total	Z value	P value	Inference
	N	M	S	N	M	S					
Ghanavyoshadi Khanda											
BT-AT	4	25	10	0	00	00	11	15	-2.0	0.04	S
BT-FU	4	25	10	0	00	00	11	15	-2.0	0.04	S

Vidaryadi Khanda											
BT-AT	7	45	31	0	00	00	7	15	-2.1	0.034	S
BT-FU	7	4	28	0	00	00	8	15	-2.6	0.08	S

Subjective Parameter between the Groups

1. *Kshut*

Table 4: Shows effect of *Abhyavarana Sakti* between the groups

Parameters	N	Gh ana Vyo sha di (N)	Vid ary adi (N)	Mean rank		Sum rank		U	Z	P	Interpreta tion
BT-AT	30	15	15	13.73	12.2	206	209	86	-1.28	0.2	NS
BT-FU	30	15	15	13.73	12.2	206	209	86	-1.28	0.2	NS

2. *Abhyavarana Sakti*

Table 5: Shows effect of *Abhyavarana Sakti* between the groups

Parameters	N	Gh ana Vyo sha di (N)	Vid ary adi (N)	Mea n rank		Sum rank		U	Z	P	Interpreta tion
BT-AT	30	15	15	12.9	11.8	180	185	60	-0.51	0.61	S
BT-FU	30	15	15	15.5	13.3	225	225	110	0.0	1.0	NS

Objective Parameter

1. Weight

Table 6: Shows effect of weight both the groups

Weight (Mean score group A)		N	SD	S.E.M	Mean difference	%	T	P	Interpretation
BT	AT	15	0.26	0.67	-0.48	3.9	7.08	0.00	HS
12.1	12.6								
BT	FU	15	0.29	0.77	-0.75	5.9	9.73	0.00	HS
12.1	13.0								

Weight (Mean score group B)		N	SD	S.E.M	Mean difference	%	T	P	Interpretation
BT	AT	15	0.43	0.47	-0.43	3.3	9.1	0.00	HS
13.0	13.4								
BT	FU	15	0.74	0.56	-0.74	5.6	13.1	0.00	HS
13.0	13.7								

2. Height

Table 7: Effect of height

Height (Mean score group A)		N	SD	S.E.M	Mean difference	%	T	P	Interpretation
BT	AT	15	0.71	0.07	-0.17	0.17	2.4	0.027	S
95.6	95.7								

BT	FU	15	0.75	0.071	-0.20	2.0	2.8	0.014	S
95.6	95.8								

Height (Mean score group B)		N	SD	S.E.M	Mean difference	%	T	P	Interpretation
BT	AT	15	0.10	0.028	0.07	0.07	2.5	0.022	S
99.3	99.4								
BT	FU	15	0.27	0.094	0.18	0.18	2.5	0.022	S
99.3	99.4								

3. Mid upper arm circumference (MUAC)

Table 8: Effect of midarm circumference on both groups.

MUAC (Mean score group A)		N	SD	S.E.M	Mean difference	%	T	P	Interpretation
BT	AT	15	0.07	0.083	0.086	0.52	4.02	0.001	HS
15.10	15.18								
BT	FU	15	0.01	0.129	0.180	1.0	4.32	0.001	HS
15.1	15.28								

MUAC (Mean score group B)		N	SD	S.E.M	Mean difference	%	T	P	Interpretation
BT	AT	15	0.94	0.243	0.12	0.77	4.9	0.00	HS
15.4	15.5								

BT	FU	15	0.96	0.248	0.17	1.1	6.9	0.00	HS
15.4	15.6								

4. Body mass index (BMI)

Table 9: Effect of BMI in Ghanavyoshadi Khanda

BMI (Mean score group A)		N	S D	S.E .M	Mean difference	%	T	P value	Interpretation
BT	AT	15	0.37	0.237	0.55	1.3	5.7	0.00	HS
15.01	15.23								
BT	FU	15	0.34	0.259	0.80	1.9	8.9	0.00	HS
15.01	15.3								

BMI (Mean score group B)		N	S D	S.E. M	Mean difference	%	T	P	Interpretation
BT	AT	15	1.8	0.507	0.4		1.8	.507	HS
15.3	15.6								
BT	FU	15	1.9	0.509	0.5	2.6	-5.9	0.00	HS
15.3	15.7								

Objective Parameters between the Groups

1. Weight

Table 10: Shows the comparative effect on weight

Weig ht	Group	N	M. D	S.E. M	T	P	Interpreta tion
BT-AT	Ghanavyos hadi	15	0.48	0.06	0.56	0.57	NS

	Vidaryadi	15	0.43	0.04			
BT-FU	Ghanavyos hadi	15	0.82	0.09	0.66	0.51	NS
	Vidaryadi	15	0.74	0.05			

Effect of treatment on Subjective parameters

Within the groups - statistically, both showed highly significant changes in *Kshut*, *Abhyavarana Shakti* & significant changes in *Badhavit*. Insignificant changes in *Nidra*, *Pipasa* & *Alpapranaschakriya*. Between the groups, statistically both the groups are showing non-significant. But clinically both groups are showing significant improvements in the management of *Karshya*.

DISCUSSION

Undernutrition is one of the major causes of increased morbidity & mortality among children. One of the most emerging issues in the present scenario is having long term effects on physical & cognitive development.^[18]

Undernutrition is defined as a condition where the body lacks the required amount of nutrition due to insufficient intake or improper intake of food that lacks nutrients. It includes stunting-low height for age, wasting- low weight for height & underweight -low weight for age.^[19]

Globally, about 667 million under 5 children are malnourished. Out of this 159 million, were stunted, 41 million were overweight, and 50 million were wasted.^[20] In South Asia, India is one of the most affected countries. Annually International food policy & research institute publishes the global hunger index.

According to a 2019 report, India is ranked 102 out of 119 countries.^[21] As per NFHS 4 in India shows 35.7% under 5 children were underweight, 38.4% were stunted & 21% were wasted.^[22] In developing countries like India, the nutritional status of children depends on socioeconomic status, awareness of diseases, parent’s education, safe drinking facility & hygienic sanitation facilities.^[23]

The impact of covid 19 further intensifies the condition. Countrywide lockdown led to the sudden cessation of the economy & triggered unemployment. People started to purchase less food, food with low nutritious contents & skip the number of meals in a day. The hindrance to the food supply, labor shortage, and limited production affect pregnant women & children adversely. All these factors lignite the under nutrition & lowers immunity which further made them prone to infections. So, to cope with this condition more administrative & political support is required.^[24]

Ahara is the most important factor for the survival of life. It is described as the supreme pillar among *Trayopasthambha* which supports & balances life.^[25] Food is considered a *Pranadha* / life supporter. *Acharya Kashyapa* elaborated *Ahara* as *Mahabhaishajya* - by proper administration of food, it is possible to cure hundreds of diseases.^[26] *Ayurveda* described *Ahara* & *Vihara* as the major causes of every disease.

Ayurveda has described numerous diseases under an umbrella term - *Kuposhanajanya Vyadhi*. This can be described under these heading - *Dushta Stanyapana Janya Vikaras, Garbhaja Phakka Roga, Vyadhija Phakka, Parigarbika, Karshya*. *Karshya* is one of the nutritional disorders explained in the classics. It is described as an *Apatarnajanya Vyadhi*.^[27] There is no direct reference for *Karshya in Bala*. Most *Acharyas* are considered a symptom of the disease / condition. *Karshya* is an *Apatarnajanya Vyadhi* & *Rasa Pradoshaja Vyadhi*. It is the nutritional disorder explained in the classics. *Acharya Charaka* is described under *Asthanindhita Purusha*.^[28] *Acharya Kashyapa* mentioned the *Vyadhija Phakka*.^[29] which can be related to Malnutrition. *Acharya Vagbhata* is described as *Balashosha* & *Ksheeraja phakka*.^[30] Similarly, in *Astanga Samgraha* is mentioned as *Parigarbhika* & *Garbhaja Phakka*^[31] caused by a child on feeding breast. *Charakacharya* opines it as a *Vataja Stanyadushtivikara*.^[32] *Susruthacharya in Sutra Stana* mentioned that due to excessive intake of dry food, fasting, low caloric diet, excessive, forcible/ voluntary control of natural urges, loss of sleep, fear, etc, derangement of *Agni* occurs which hampers the

production of *Rasadhatu* in terms of quantity and quality.^[33]

The etiological factors of *Karshya* aggravate *Vayu* which ultimately vitiates the *Agni* causing *Mandya* of *Agni*, subsequently leading to the formation of *Ama*. Following the absorption of *Ama* into the system from the gastrointestinal tract, the body considers the *Ama* as a toxic material and spread throughout the body channels. *Ama* having the quality of *Daurgandhatva, Picchilatva, Tantumatva, and Guruta*, obstructs the *Srotas*.^[34] Due to, the movement of *Ama* the nutritive materials cannot reach their destination. Ultimately there is a hindrance in the sequence of formation of *Dhatu*s. Consumption of food that is of no nutritive value is incapable to form *Raktadhatu*. This sequential malformation / degeneration of *Dhatu* ultimately lead to *Karshya*.

Ghanavyoshadi Khanda

Acharya Vagbhata has mentioned *Ghanavyoshadi Khanda* in *Uttara Stana* 2nd chapter in the management of *Karshya*. It is a combination of *Ghana, Shunti, Pippali, Maricha, Patha, Murva, Satavari, Payasya, and Prithakparni*.

- Majority of the drugs are having *Madhura Vipaka* with predominant of *Prithvi* & *Jala Mahabhuta*. Having the qualities like *Brimhana, Jeevana, and Preenana*. It is considered as *Ajanmyasatmya* at all stages of life & helps in *Dhatuvardhana*.
- Most of the drugs are having *Snigdha Guna* which is *Kledana, Mardava in nature* & improves the *Bala* & *Varna*.
- *Trikatu* drugs are having *Katu Rasa, Ushna Veerya* & having the qualities like *Deepana, Pachana, Rasayana, Vrishya, Rechaka* & *Krimigna* property.
- *Payasa, Satavari* & *Prithakparni* are having *Madhura Rasa, Madhura Vipaka, Sheeta Veerya, Snigdha Guna*. They are having the qualities like *Pushti Vardhaka, Rasayana, Medya, Balya*.

Vidaryadi Khanda

Yoga is mentioned in *Yogaratanakara Balaroga Adhikara*. Drugs used in this formula are *Vidarikanda, Yava, Godhuma* & *Pippali*.

Acharya Charaka rightly advised the administration of *Mridu Samshodhana*. Considering the fact *Brimhana* therapy in the form of *Vidarikandadi Churna* has been given.

- *Pippali* enhances the *Agni* and does the *Deepana*, *Pachana* and *Srotoshodhana*.
- Probable mode of action of *Brimhana Dravya's* can be accessed by *Guna Panchaka*. The majority of ingredients have a predominance of *Guru*, *Snigdha*, *Shita* and *Manda Guna*, *Madhura Rasa* and *Madhura Vipaka* causing *Dhatuvarhdhana*, *Rasayana* effect.
- The research on *Vidarikanda* suggests significant anxiolytic and anti-stress properties, *Vidarikanda* has immunomodulatory and anti-oxidant, cardioprotective, hypolipidemic, hepatoprotective, neuroprotective, and nootropic properties.

RESULT

Children showed improvements in all aspects of *Karshya* w.s.r. to underweight like weight, height, MUAC, & BMI. Both the groups showed highly significant improvement in *Kshut*, *Abyavarana Sakti* & significant changes in *Badhavitt*. Insignificant changes in *Alpapranaschakriya*, *Pipasa* & *Nidra*.

CONCLUSION

Both drugs were seen with positive results in the management of *Karshya* especially *Kshut*, *Abhyavara Sakti*, *Badhavitt*. Hence, it can be concluded that both drugs with proper dosage according to the age helps to improve in gaining weight; proper growth & development.

REFERENCES

1. Acharya Kumar Shrinidhi, Acharya's textbook of Kaumarabhrithya, 1st edition. Varanasi: Choukambha Orientalia, 2016, vol 1. chap 2, Definitions of Kaumarabhritya: p.8.
2. A Parthasarathy, IAP Textbook of pediatrics, editor PSN Menon, MKC Nair, 7th edition, New Delhi: Jayapee Brothers' Medical Publishers, 2019: chap 3.2, Growth: Birth to puberty: p. 100.
3. Nix staci, basic nutrition & diet therapy, 1st edition, New Delhi: Reed Elsevier; 2005: chapter 5, p.71.
4. Gupta Piyush, PG Textbook of pediatrics, editor PSN Menon, Siddarth Ramji, 2nd edition, New Delhi: CBS Publishers & Distributors; 2016: chap 22.5, Undernutrition: prevalence & etiology: p. 966.
5. Amrita Ghatak, Health, labor supply & wages: a critical review of the literature. The Indian Economic Journal, 201: p.118-143.
6. A Parthasarathy, IAP textbook of pediatrics, editor PSN Menon, MKC Nair, 7th edition, New Delhi: Jayapee Brothers' Medical Publishers, 2019: chap 3.2, Growth: Birth to puberty: p. 100.
7. Ghai O.P, Essential Pediatrics, edition, New Delhi: CBS Publishers & Distributors; 2005: chap 6th, Growth: p. 13, 94.
8. Ghai O.P, Essential Pediatrics, edition, New Delhi: CBS Publishers & Distributors; 2005: chap 6th, Growth: p. 13, 94
9. Sinha Rajesh kumar, Determinants of stunting, wasting & underweight in five high burden pockets of four Indian states, Indian journal of community medicine, vol 43, 2018: p. 279-283.
10. Gupta piyush, PG Textbook of pediatrics, editor PSN Menon, Siddarth Ramji, 2nd edition, New Delhi: CBS Publishers & Distributors; 2016: chap 22.5, Undernutrition: prevalence & etiology: p. 966.
11. Issac Kissiangani, Prevalence of malnutrition among preschool children (6-59 months) in Western province, Kenya. 2014: p. 398-406
12. Acharya Yadavaji Trikamji, Agnivesha, Charaka Samhitha, Ayurveda deepika commentary of Chakrapanidatta, Sutrastana; Trisreshaneeyam, Chap 11, verse 35. Varanasi: Chaukambha Orientalia, 2011: p. 74
13. Acharya Tewari P V, kasyapa Samhitha, Kasyapa, with English translation and commentary by Chowkambha Visvabharati, Varanasi, Oriental Publishers & Distributors, 2008: Chap 4, Yushanirdeshiyam: p. 469
14. Murthy K R. Srikantha, English translation on Astanghridaya of Vagbhata. Reprinted edition. Sutra stana; Vol 1. Matrasheediya Adhyaya: Chapter 8, Verse 3. Varanasi: Chaukambha Krishnadas academy, 2007: p 124.
15. Sharma R K, Text with English translation on Charaka Samhitha. 6th edition. Chikitsastana; Vol 1V. Grahani chikitsa: Chapter 15, Verse 3. Varanasi: Chaukambha Krishnadas Academy, 2019: p 1.
16. Acharya Jadavaji Trikamji, Susrutha on Susrutha Samhitha. Nibandhasangraha commentary of Dalhana. Reprint edition. Sutrastana; Doshadhatumalakshayavidhi Vijnaneeya: Chapter 15, Verse 33. Varanasi: Chaukambha surbharati prakashan, 2003: p 74.

17. Katona Peter, Judit Katona-Apte, The Interaction between Nutrition and Infection, Clinical Infectious Diseases, Volume 46, Issue 10, 15 May 2008, Pages 1582–1588
18. Maleta, Ken. "Undernutrition." Malawi Medical Journal: the journal of Medical Association of Malawi vol. 18,4 (2006): 189-205.
19. Ghai O.P, Essential Pediatrics, chap 7th, 9th edition, New Delhi: CBS Publishers& Distributors; 2005, p. 93.
20. A Parthasarathy, IAP textbook of pediatrics, chap 4.4 editor PSN Menon, MKC Nair, 9th edition, New Delhi: jayapee brothers' medical Publishers, 2019, p. 182.
21. Murarkar, S, Gothankar, J., Doke, P. et al. Prevalence and determinants of undernutrition among under-five children residing in urban slums and rural area, Maharashtra, India: a community-based cross-sectional study. BMC Public Health 20, 1559 (2020)
22. Ghai O.P, Essential Pediatrics, chap 7th, 9th edition, New Delhi: CBS Publishers& Distributors; 2005, p. 94.
23. Murarkar, S., Gothankar, J., Doke, P. et al. Prevalence and determinants of undernutrition among under-five children residing in urban slums and rural area, Maharashtra, India: a community-based cross-sectional study. BMC Public Health 20, 1559 (2020).
24. Kurtz, A., Grant, K., Marano, R. et al. Long-term effects of malnutrition on the severity of COVID-19. Sci Rep 11, 14974 (2021).
25. Acharya Jadavaji Trikamji, Agnivesha on Charaka Samhitha. Ayurveda deepika commentary of Chakrapanidatta. Reprint edition. Sutra stana; Trisreshaneeyam: Chapter 11, Verse 13. Varanasi: Chaukambha Orientalia,2013: p 74.
26. Tewari.P, textbook with English translation & commentary on Kashyapa Samhitha. Reprinted edition. Khila stana;Yushanirdesheeya adyayam: Chapter 4, Verse 6. Chaukambha viswabharati,2008: p 469.
27. Acharya Jadavaji Trikamji, Agnivesha on Charaka Samhitha. Ayurveda Deepika commentary of Chakrapanidatta. Reprint edition. Sutra stana; Santarpaneeyam:Chapter 23, Verse 34. Varanasi: Chaukambha Orientalia, 2020: p.123.
28. Acharya Jadavaji Trikamji, Agnivesha on Charaka Samhitha. Ayurveda deepika commentary of Chakrapanidatta. Reprint edition. Sutrastana; Astouninditeeyam: Chapter 21, Verse 3. Varanasi: Chaukambha Orientalia,2013: p 116.
29. Tewari.P, Textbook with English translation & commentary on Kashyapa Samhitha. Reprinted edition. Chikitsastana; Phakkachikitsa: Chapter 17, Verse12. Chaukambha viswabharati,2008: p 242.
30. Murthy K R. Srikantha, English translation on Astanghridaya of Vagbhata. Reprinted edition. Uttara stana; Vol 3. Balaamayapradishedadyaya: Chapter 2, Verse 45. Varanasi: Chaukambha Krishnadas academy, 2010: p 20.
31. Mitra jyothir, Ashtangasangraha of VriddhaVagbhata with Shashilekha Sanskrita commentary by Indu, Prologue in sanskrita & English Edited by Shivaprasada Sharma, Uttartantra; Balaamayapradishedadyaya: Chapter 2, Verse 42. Varanasi: Chaukambha sanskrit series,2010: p 345.
32. Acharya Jadavaji Trikamji, Agnivesha on Charaka Samhitha. Ayurveda deepika commentary of Chakrapanidatta. Reprint edition. Sareerastana; Jatisootreyamadyaya: Chapter 8, Verse 55. Varanasi: Chaukambha Orientalia, 2020: p. 351.
33. Acharya Jadavaji Trikamji, Susrutha on Susrutha Samhitha. Nibandhasangraha commentary of Dalhana. Reprint edition. Sutra stana; Doshadhatumalakshayavidhi Vijnaneeya: Chapter 15, Verse 33. Varanasi: Chaukambha surbharati prakashan,2003: p 74.
34. Sitaram Bulusu, Bhavaprakasha of Bhavamisra. First edition. Madhyama & Uttara khanda; Vol 2.: Chapter1, Verse 61. Varanasi: Chaukambha Orientalia,2010: p 313

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