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An Exploratory Clinical Trial to Evaluate Efficacy of *Kushmanda (Benincasa hispida*) for weight gain in Malnourished Children

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ABSTRACT

Malnutrition is the most prevalent condition distressing the health of children. In Maharashtra the severity of this situation is considered to be alarming as 36% of children are underweight as per NHS 4. As per review of Ayurvedic Samhita, it is found that in *Shakvarga*, *Kushmanda* fruit (*Benincasahispida*) is recommended as *Bruhan, Balya* and *Dhatupushtikar*.Hence the present study was planned to assess the importance of *Kushmanda* as balya in Malnourished children.Children were divided in two groups- Trial group was received *Kushmandakalpa* with regular diet and Control group was received regular diet without *Kushmanda kalpa.* Duration -3 months. It is concluded that there is significant change observed in both Groups. Unpaired t-test was used for comparison between groups. It is observed that mean difference for Group A is greater than Group B. Hence it is concluded that effect observed in Group A is more than Group B.*Kushmanda kalpa* is effective as *balya* in Malnourished children than regular standard diet in Aanganwadi. After the therapy weight of children has significantly increased in trial group than control group.

Keywords: Balya, Kushmanda, Malnourished, Diet.

INTRODUCTION

Malnutrition is the most prevalent condition distressing the health of children. The term malnutrition refers to both under nutrition as well as over nutrition. Under nutrition is a condition in which there is insufficient consumption, deprived absorption or extreme loss of nutrients. Over nutrition is caused by uncontrolled intake of certain nutrients. In this study the term malnutrition is considered as under nutrition. During 2010-15, more than 14 percent of the world's children under the age of 5 years were underweight for their age. The ratio fluctuated from 2 percent of children in developed countries to 30 percent in developing countries [1]. Malnourished children may also suffer from numerous associated complications. They are more susceptible to infections like Pneumonia, sepsis, diarrhoea etc.

Nearly 50% of all deaths in children under 5 are due to undernutrition, rendering into the loss of about 3 million young lives a year. Undernutrition sets children at larger possibility of dying from common infections, increases the occurrence and gravity of such infections, and slow down the recovery [2].

The World bank estimations are that India is one of the uppermost standing countries in the world for the number of children suffering from malnutrition.The incidence of underweight children in India is amongst the peak in the world, and is almost double that of Sub-Saharan Africa with dreadful outcome for mobility, mortality, efficiency and financial growth [3].

In Maharashtra the severity of this situation is considered to be alarming as 36% of children are underweight as per NHS 4 (2015-16) [4].

Factors which play a prime role in prevalence of malnutrition includes poverty, starvation, late introduction of weaning food & lack of health education. Malnutrition in children is also affected by access to health services, standard of care for the child and pregnant mother as well as good sanitation practices. Also, big families & higher birth order effect in higher occurrence of malnutrition.

One of the main reasons for malnutrition in India is economic variation. Due to the low social grade of some population groups, their diet often absences in both quality and quantity. Women who suffer malnutrition are less expected to have healthy babies. Deficiencies in nutrition impose long-term harm to both individuals and society. Compared with their better-fed peers, nutrition-deficient persons are more likely to have infectious diseases such as pneumonia and tuberculosis, which lead to a more mortality rate.

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As per review the malnutrition has an enormous impact on social, economic, industrial, cultural and other developments in the country by impairing the physical and mental potentialities. So, nutrition protection and promotion activity are being very essential to our country.

In Ayurveda, excessive emaciation comes under *ashtaunindita purusha* mentioned as per *Acharya Charaka* [5]. If the signs and symptoms of *Karshya* and undernutrition are put side by side, it is seen that they are similar. Ayurveda aims at the prevention, promotion and maintenance of health. The *Trayopasthmbhas* are the subsidiary pillars, which support the body throughout the life scan.The *Trayopasthmb*has are *Aahar, Nidra* and *Brahmacharya*. Each one of these deserves due importance because these factors are concerned with the basic needs of living system and over indulgence or total abstinence of any of these may be harmful to life. The *Aahar* is mainly concerned with the energy production and maintenance of living tissues. Ayurveda is the only science which recommends the importance of Diet. There are many *Aahardravyas* or *Aaharkalpana* described in various Ayurvedic Samhitas which may be useful as *balya* in malnourished children with reference to weight gain.

As per review of Samhita, it is found that in *Shakvarga, Kushmanda* fruit (*Benincasa hispida*) is recommended as *Bruhan, Balya* and *Dhatupushtikar* [6].

So, the present study was scheduled to evaluate the importance of *Kushmanda* in malnourished children with respect to weight gain. *Kushmanda kalpa* is not mentioned in any Samhita, but it is used practically by many Vaidyas in regular practice. So, it was taken for study as it has *Vridha Vaidya Parampara*.

Aim

To evaluate the efficacy of *Kushmanda kalpa* for weight gain in malnourished children.

MATERIALS AND METHODS

Study design – An open end, randomized, controlled clinical study.

Materials

1) Subjects – Malnourished underweight children.
2) Drug – *Kushmanda Kalpa (VridyaVaidyadhar)*
3) Digital Weighing machine

Methodology

- Total 100 malnourished children were selected from various Aanganwadis centers for study.
- Body weight is taken before starting the trials and after completing clinical trial and at every follow up.
- Grade of malnutrition was decided by plotting age and weight readings on growth chart provided by ICDS.
- Specially designed case report form was prepared for the study.
- Children were divided in two groups-

Group A - Trial group- 50 children were received *Kushmanda kalpa* with regular diet.

Group B -Control group - 50 children were received regular diet without *Kushmanda kalpa.*

- Duration – 3 months. Dose - 10 gm. *Kala - Rasayan*. *Anupan* - Water
- Follow up was taken at interval of 1 month for a period of 3 months.
- An informed written consent was obtained from every patient before including in trial. The aim & procedure of the study was explained to the patient.

Inclusion Criteria

1) Age group – 2 to 5 years.
2) Moderately underweight children. (As per ICDS programme guidelines).

Exclusion criteria

1) Severely underweight children. (As per ICDS programme guidelines).
2) Children suffering from another serious systemic disease.
3) Children who have underweight due to any other systemic diseases & congenital disorders.

Children were assessed and evaluated on the basis of objective & subjective parameters.

Criteria of Assessment

Children were assessed and evaluated on the basis of following objective parameter.

1) Weight for Age- Grades of malnutrition was decided by weight for age criteria according to IAP classification of malnutrition. Age was obtained from date of births & weight measured by standard weighing balance. Grade was decided by plotting age and weight readings on growth chart provided by ICDS.

OBSERVATIONS AND DISCUSSION

This clinical study was done as per specified protocol under the guidance of experts.

For clinical trials, total 100 children of malnutrition were selected from various Aanganwadis.Kushmanda kalpa was given to 50 children once a day at morning for a period of 3 months and second group of 50 children were not given Kushmanda kalpa, this group was observed only, they received only regular aanganwadi diet.

The results of therapy were assessed individually on body weight Parameter before & after treatment. Observations were taken at the interval of 1 month for 3 months. Data was collected and classified for statistical analysis and analysed accordingly.

Body weight was taken for all the children before and after the therapy, also on every follow up. It is avery important criteria to evaluate the result in malnutrition. In Group A, mean score of body weight before treatment was 10.64 and after treatment was 11.09. In Group B, mean score of body weight before treatment was 11.15 and after treatment it was 11.22.It is observed that P Values of Group A and Group B are less than 0.05 hence highly significant result were found in both groups.

To study follow up wise results, Repeated measures ANOVA test was applied. In Group A, As P- value is less than 0.05; there is significant difference in mean body weight during each follow up. As mean body weight increases from day 0 to day 90, kohla kalpa is seen effective in increasing body weight. In Group B, as P value is less than 0.05, there is significant difference in mean body weight during each follow up. In control group, initial mean score was increased from 11.15 to 11.22 at last follow up which is statistically significant but it may be due to naturally weight gain in children and due to diet provided in aanganwadi and very few children gain the weight in group B.

Since observations are quantitative, unpaired t-test was used for comparison between Group A and Group B.

BODY WEIGHT	MEAN	STD.DEVIATION	TEST STATISTIC	P VALUE
GROUP A	0.454	0.221	T = 11.392	< 0.001
GROUP B	0.068	0.091		

From above table it can observed that P-Value is less than 0.001. Hence it is concluded that there is significant difference observed in Group A and Group B.

Further it was observed that mean difference of Group A is 0.454 and Group B is 0.068.Mean difference of Group A is greater than Group B hence it was concluded that Group A results were highly significant than Group B.

This may be due to *Kushmanda* having *Madhura Rasa* and *veepak a*nd also *sheet veerya*, *brihan* property,*dhatuvardhak* and *balyakar*. *Pakva kushmanda* alleviates all the *doshas* and it is also appetizer [7].

CONCLUSION

- *Kushmanda kalpa* is effective in malnourished children. After the therapy weight of children has significantly increased in trial group than control group.
- After the therapy, significant results in objective parameter were found in both groups. When mean ranks of both groups are compared, it can be concluded that the trial group is more significant than the control group.
- It is finally concluded that the therapy used in the trial group i.e. *Kushmanda kalpa* is more effective to increase weight as compared to regular standard diet group.
- It is a scenario of India that poor class people cannot afford nutritious food and due to lack of proper nourishment most of the poor children are prone to malnutrition.

REFERENCES

1. Park K. Park's Textbook of Preventive and social medicine,24th edition, Jabalpur M/s Banarsidas Bhanot, Jan.2017, Chapter 10, Preventive medicine in Obstetrics, Paediatrics and Geriatrics, p.585.
2. Malnutrition. UNICEF for every child, UNICEF Data: Monitoring the situation of children and women, May 2018, Available from https://data.unicef.org/topic/nutrition/malnutrition/
3. Malnutrition in India, From Wikipedia, the free encyclopaedia, 2019, Available from https://en.wikipedia.org/wiki/Malnutrition_in_India
4. State/ UT-wise details of Prevalence of Malnutrition among Children under five years of age as per NFHS-3 and NFHS-4 from 2005-06 to 2015-16 (From: Ministry of Women and Child Development), Home/Catalogs/Answers Data of Rajya Sabha Questions for Session 243, Available from https://data.gov.in/resources/state-ut-wise-details-prevalence-malnutrition-among-children-under-five-years-age-nfhs-3.
5. Dr. Brahmanand Tripathi. Charak Samhita of Agnivesha vol 1, elaborated by Charak &Dridgabala edited with charak Chandrika hindi commentary, Reprint edition, Varanasi, ChaukhambaSurbharati prakashan, 2009, Sutrasthan chapter 21, verse 3, p309.
6. Khemraj Shrikrishnadas, Shaligramnighantu Bhushanam. first edition, Mumbai, Khemraj Shrikrishnadas publication, 2004, Phalshaka, p 663.
7. Bhishagvarya Krishnashastri Navre. Nighantu Ratnakar Part I, collated with spacious notes by Vasudev Laxman Shastri Panshikar and Krishnaji Vithal Soman, Edition 1st, Delhi, Chaukhamba Sanskrit Pratishtan, 2011, Gunadoshaprakaran, p 65.

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