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CLINICAL EVALUATION OF SHIGRU SWARASA (MORINGA OLEIFERA) IN THE MANAGEMENT OF KARSHYA (UNDERWEIGHT) AMONG CHILDREN AGED 3-7 YEARS: AN EXPERIMENTAL STUDY

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ABSTRACT

Childhood undernutrition remains a major public health challenge, particularly in rural India, and is comparable to Karshya in Ayurveda, a condition resulting from impaired digestion (Agnimandya) and inadequate tissue nourishment. The present study aimed to evaluate the clinical efficacy of Shigru Swarasa (*Moringa oleifera* Lam.) in the management of Karshya among underweight children aged 3-7 years. An open-label experimental study was conducted on 30 underweight children selected from ten rural Anganwadi centres. Freshly prepared Shigru Swarasa was administered orally twice daily for eight months, and anthropometric parameters were assessed through monthly follow-up. Among the enrolled children, 18 (60%) showed significant improvement, 5 (16.67%) showed mild improvement, 5 (16.67%) showed no improvement, and 2 (6.67%) discontinued treatment. Statistical analysis revealed significant improvement following the intervention ($p < 0.05$). The findings suggest that Shigru Swarasa is a safe, economical, and effective Ayurvedic nutritional intervention that promotes healthy growth by improving digestion, nutrient assimilation, and tissue nourishment in children with Karshya.

Keywords: Karshya, Shigru Swarasa, *Moringa oleifera*, Underweight, Ayurveda, Child Nutrition.

INTRODUCTION

Childhood undernutrition remains a major public health concern, particularly in developing countries and rural communities. It adversely affects physical growth, cognitive development, immunity, and overall quality of life. According to the World Health Organization (WHO), undernutrition is a significant contributor to childhood morbidity and mortality, despite ongoing nutritional intervention programmes.

In Ayurveda, undernutrition can be correlated with Karshya, a condition characterized by emaciation, poor muscle mass, weakness, and impaired growth. Acharya Charaka has described Karshya among the Ashta Nindita Purusha, attributing its occurrence to Agnimandya, inadequate nourishment (Apatarpana), improper dietary habits, recurrent illnesses, and impaired tissue metabolism. Ayurveda emphasizes that proper nourishment depends on efficient digestion (Agni) and sequential tissue nourishment (Dhatu Poshana). Disturbance in these physiological processes results in depletion of body tissues and poor physical development.

The management of Karshya primarily involves Brimhana Chikitsa, which aims to improve digestion, enhance nutrient assimilation, and promote tissue nourishment through appropriate diet and herbal interventions.

Shigru (*Moringa oleifera* Lam.) is a well-known medicinal plant described in Ayurvedic classics. It possesses Katu-Tikta Rasa, Laghu-Tikshna Guna, Ushna Virya, and is known for its Deepana, Pachana, Balya, Rasayana, and Krimighna properties. Modern studies have also shown that Shigru leaves are rich in proteins, essential amino acids, vitamins, minerals, and antioxidants, making them an excellent natural nutritional supplement.

Considering its nutritional value and therapeutic potential, Shigru Swarasa may help improve digestion, nutrient absorption, and tissue nourishment in underweight children. Therefore, the present study was undertaken to evaluate the clinical efficacy of Shigru Swarasa in the management of Karshya among children aged 3–7 years.

NEED OF THE STUDY

Childhood undernutrition remains a significant public health problem, particularly in rural India, leading to impaired growth, reduced immunity, and delayed cognitive development. Despite various nutritional programmes, the prevalence of underweight children continues to be high among socioeconomically disadvantaged populations.

In Ayurveda, undernutrition can be correlated with Karshya, which results from Apatarpana (inadequate nourishment), Agnimandya (impaired digestive fire), Dhatvagni Mandya, improper dietary habits, and recurrent illnesses. Ayurveda emphasizes that proper digestion and tissue nourishment are essential for healthy growth; therefore, improving nutrient assimilation is as important as providing adequate nutrition.

Shigru (*Moringa oleifera* Lam.) is a well-known medicinal plant described in Ayurvedic classics for its Deepana, Pachana, Balya, and Rasayana properties. Fresh Shigru Swarasa is rich in proteins, vitamins, minerals, antioxidants, and essential nutrients that support growth and improve nutritional status. However, despite its widespread availability and nutritional benefits, clinical evidence regarding its role in the management of Karshya in children is limited.

Therefore, the present study was undertaken to evaluate the effectiveness of Shigru Swarasa in improving anthropometric parameters and nutritional status among underweight children aged 3–7 years, thereby providing scientific evidence for its use as an affordable Ayurvedic nutritional intervention.

AIM

To evaluate the clinical efficacy of Shigru Swarasa (Moringa oleifera Lam.) in the management of Karshya (underweight) among children aged 3–7 years.

OBJECTIVES

Primary Objective

- To evaluate the effectiveness of **Shigru Swarasa** in improving body weight and growth among underweight children aged 3–7 years.

Secondary Objectives

1. To assess the prevalence of underweight children in the selected rural population.
2. To evaluate changes in anthropometric parameters including body weight and height following administration of Shigru Swarasa.
3. To assess improvement in appetite, physical activity, general health, and nutritional status after intervention.
4. To evaluate the role of **Shigru Swarasa** as a **Brimhana** and **Balya** therapy from an Ayurvedic perspective.
5. To explore the feasibility of using locally available **Shigru** as an economical nutritional supplement for rural children.

REVIEW OF LITERATURE

Ayurvedic Perspective

According to Ayurveda, proper growth and development depend on Agni (digestive fire), proper formation of Rasa Dhatu, and sequential nourishment of all body tissues through Dhatu Poshana Nyaya. Impairment of these physiological processes due to Agnimandya, inadequate diet (Apatarpana), recurrent illness, or faulty metabolism leads to Karshya, characterized by emaciation, weakness, reduced muscle mass, and poor physical development. Acharya Charaka has included Karshya among the Ashta Nindita Purusha and recommends Brimhana Chikitsa comprising nourishing diet, herbal preparations, and lifestyle measures to restore tissue strength and promote healthy growth.

Shigru in Ayurveda

Shigru (Moringa oleifera Lam.) is a well-known medicinal plant described in Charaka Samhita, Sushruta Samhita, and Bhavaprakasha Nighantu. It possesses Katu-Tikta Rasa, Laghu-Tikshna Guna, Ushna Virya, and Katu Vipaka, and is attributed with Deepana, Pachana, Krimighna, Balya, Rasayana, and Shothahara properties. These actions help improve digestion, nutrient assimilation, immunity, and overall tissue nourishment, making Shigru beneficial in conditions associated with nutritional deficiency.

Ayurvedic Pharmacological Properties

Property	Description
Sanskrit Name	Shigru
Botanical Name	<i>Moringa oleifera</i> Lam.
Family	Moringaceae
Rasa	Katu, Tikta
Guna	Laghu, Tikshna
Virya	Ushna
Vipaka	Katu
Doshaghnata	Kapha-Vata Shamaka
Karma	Deepana, Pachana, Balya, Rasayana, Krimighna

Modern Scientific Perspective

Moringa oleifera leaves are rich in proteins, essential amino acids, vitamins (A, C and E), calcium, iron, potassium, zinc, and antioxidants. Clinical studies have reported that *Moringa* supplementation improves nutritional status, body weight, haemoglobin levels, immune function, and antioxidant activity. Fresh Shigru Swarasa provides a natural source of these nutrients while improving digestion and nutrient absorption, supporting the Ayurvedic concept of Brimhana.

Rationale of the Study

Although Shigru is widely recognized for its nutritional and medicinal value, clinical evidence regarding the efficacy of Shigru Swarasa in the management of Karshya among underweight children is limited. Therefore, the present study was undertaken to evaluate its effect on anthropometric parameters and nutritional status, with the aim of providing scientific evidence for its use as a safe, affordable, and community-based Ayurvedic nutritional intervention.

MATERIALS AND METHODS

Study Design and Setting

The present study was an open-label, prospective, interventional study conducted in ten Anganwadi centres located in the rural areas surrounding the institutional hospital. Ethical clearance was obtained from the Institutional Ethics Committee, and written informed consent was obtained from the parents or guardians of all participants.

Study Population

A total of 30 underweight children aged 3–7 years were enrolled based on the WHO Child Growth Standards.

Inclusion Criteria

- Children aged 3–7 years of either sex.
- Underweight according to WHO growth standards.

- Written informed consent from parents/guardians.

Exclusion Criteria

- Congenital or genetic disorders affecting growth.
- Severe systemic illness.
- Premature birth with major complications.
- Children receiving long-term nutritional supplements or with attendance below 75%.

Study Drug and Intervention

Fresh Shigru Swarasa (*Moringa oleifera*) was prepared according to the classical method described in Sharangadhara Samhita. Each child received 5 mL of Shigru Swarasa with approximately 50–60 mL of water, twice daily after meals for eight months. Parents were advised regarding a balanced diet, personal hygiene, deworming, adequate sleep, and regular growth monitoring.

Assessment Criteria

Anthropometric parameters including body weight (kg) and height (cm) were recorded at baseline and during monthly follow-up visits. Secondary assessments included appetite, general health, physical activity, frequency of illness, and overall nutritional status.

Statistical Analysis

Data were analysed using Microsoft Excel. Descriptive statistics were used to calculate frequencies and percentages, and the Chi-square test was applied to assess statistical significance. A p-value <0.05 was considered statistically significant.

RESULTS

A total of 30 children diagnosed with Karshya (underweight) were enrolled in the study. Twenty-eight children completed the entire treatment duration, while two children discontinued due to personal reasons unrelated to the intervention.

Clinical Outcome

Clinical Outcome	Number of Children	Percentage
Significant Improvement	18	60.00%
Mild Improvement	5	16.67%
No Improvement	5	16.67%
Discontinued	2	6.67%

Anthropometric Improvement

Among the 30 enrolled children:

- Eighteen children demonstrated marked improvement in body weight, appetite, physical activity, and overall nutritional status.

- Five children exhibited mild improvement with gradual weight gain and better appetite.
- Five children showed minimal or no measurable improvement during the study period.
- Two children discontinued participation because of personal circumstances unrelated to treatment.

The majority of participants demonstrated progressive improvement in body weight and general health during the eight-month follow-up period.

Statistical Analysis

The observed frequencies were compared using the Chi-square test.

- Observed frequency: **18, 5, 5, 2**
- Expected frequency: **7.5, 7.5, 7.5, 7.5**
- Chi-square value (χ^2): **20.4**
- p-value: **0.00014**

The obtained p-value was less than 0.05, indicating a statistically significant improvement following administration of Shigru Swarasa.

DISCUSSION

Childhood undernutrition is a multifactorial condition influenced by inadequate nutrition, recurrent infections, poor hygiene, and impaired nutrient absorption. In Ayurveda, it can be correlated with Karshya, which develops due to Agnimandya, Apatarpana, and Dhatu Kshaya, resulting in poor growth and reduced body strength.

In the present study, administration of Shigru Swarasa showed encouraging improvement in anthropometric parameters and overall nutritional status. These effects may be attributed to the Deepana and Pachana properties of Shigru, which improve digestion and nutrient assimilation. Its Balya and Rasayana actions help strengthen body tissues, enhance immunity, and promote healthy growth.

Modern studies also support these findings, as *Moringa oleifera* leaves are rich in proteins, essential amino acids, vitamins, minerals, and antioxidants that play an important role in growth, tissue repair, and immune function. In the present study, 60% of children showed significant improvement, while 16.67% demonstrated mild improvement, indicating the beneficial effect of Shigru Swarasa. Its low cost, easy availability, and nutritional value make it a promising community-based intervention for managing childhood undernutrition. However, further randomized controlled studies with larger sample sizes are required to validate these findings.

Probable Mode of Action of Shigru Swarasa

According to Ayurveda, Karshya results from Agnimandya, leading to improper formation of Rasa Dhatu and inadequate nourishment of subsequent Dhatus. Shigru Swarasa, owing to its Katu-Tikta Rasa, Laghu-Tikshna Guna, and Ushna Virya, stimulates Jatharagni (Deepana) and promotes proper digestion (Pachana), thereby enhancing nutrient absorption and tissue nourishment.

Its Balya and Rasayana properties support the formation of healthy Dhatus, improve immunity, and promote physical growth. From a modern perspective, the rich content of proteins, vitamins, minerals, and antioxidants in Shigru supports tissue development, haemopoiesis, immune modulation, and overall nutritional status. The combined effect of improved digestion, enhanced nutrient assimilation, and nutritional supplementation may account for the observed improvement in body weight and growth among the study participants.

Flow of Probable Mode of Action



CONCLUSION

Childhood undernutrition continues to be a significant health challenge in rural communities, adversely affecting growth, immunity, and overall development. Ayurveda correlates this condition with Karshya, which results from impaired digestion, inadequate nourishment, and depletion of body tissues.

The present study demonstrated that administration of Shigru Swarasa for eight months produced encouraging clinical improvement among underweight children aged 3–7 years. The majority of participants exhibited improved body weight, better appetite, enhanced physical activity, and improved general health. Statistical analysis further confirmed that the observed improvement was significant.

The therapeutic benefits of Shigru Swarasa may be attributed to its Deepana, Pachana, Balya, Rasayana, and Brimhana properties together with its exceptionally rich nutritional profile. The intervention appeared to improve digestion and nutrient assimilation while simultaneously supplying essential macro- and micronutrients required for healthy childhood growth.

Being inexpensive, locally available, culturally acceptable, and easy to prepare, Shigru Swarasa has considerable potential as a community-based nutritional intervention, particularly in rural settings where childhood undernutrition remains prevalent.

However, the present study included a relatively small sample size and lacked a parallel control group. Therefore, multicentric randomized controlled clinical trials with larger sample sizes and biochemical nutritional assessments are recommended to further validate these findings and establish stronger scientific evidence regarding the role of Shigru Swarasa in the management of Karshya.

REFERENCES

1. Agnivesha. Charaka Samhita. Revised by Charaka and Dridhabala. Edited by Vaidya Jadavaji Trikamji Acharya. Varanasi: Chaukhambha Surbharati Prakashan; 2022.
2. Sushruta. Sushruta Samhita. Edited by Vaidya Jadavaji Trikamji Acharya. Varanasi: Chaukhambha Orientalia; 2021.
3. Vagbhata. Ashtanga Hridaya. Edited by Hari Sadashiva Shastri Paradakara. Varanasi: Chaukhambha Surbharati Prakashan; 2022.
4. Bhavamishra. Bhavaprakasha Nighantu. Edited by Prof. K.C. Chunekar. Varanasi: Chaukhambha Bharati Academy; 2022.
5. Sharangadhara. Sharangadhara Samhita. Edited by Pt. Parashuram Shastri Vidyasagar. Varanasi: Chaukhambha Orientalia; 2021.
6. Government of India. The Ayurvedic Pharmacopoeia of India. Part I. New Delhi: Ministry of AYUSH.
7. Sharma PC, Yelne MB, Dennis TJ. Database on Medicinal Plants Used in Ayurveda. Vol. 5. New Delhi: CCRAS; 2008.
8. World Health Organization. WHO Child Growth Standards: Length/Height-for-age, Weight-for-age, Weight-for-length, Weight-for-height and Body Mass Index-for-age. Geneva: WHO; 2006.
9. UNICEF, WHO, World Bank Group. Levels and Trends in Child Malnutrition. Geneva: WHO; 2021.
10. Gopalakrishnan L, Doriya K, Kumar DS. Moringa oleifera: A review on nutritive importance and medicinal application. *Food Science and Human Wellness*. 2016;5(2):49–56.
11. Meireles D, Gomes J, Lopes L, Hinzmann M, Machado J. A review of properties, nutritional and pharmaceutical applications of *Moringa oleifera*. *Plants (Basel)*. 2020;9(6):698.
12. Kasolo JN, Bimenya GS, Ojok L, Ochieng J, Ogwal-Okeng JW. Phytochemicals and uses of *Moringa oleifera* leaves in Ugandan rural communities. *Journal of Medicinal Plants Research*. 2010;4(9):753–757.
13. Fuglie LJ. The Miracle Tree: Moringa oleifera—Natural Nutrition for the Tropics. Dakar: Church World Service; 2001.
14. Fahey JW. Moringa oleifera: A review of the medical evidence for its nutritional, therapeutic and prophylactic properties. *Trees for Life Journal*. 2005;1:5.
15. Anwar F, Latif S, Ashraf M, Gilani AH. *Moringa oleifera*: A food plant with multiple medicinal uses. *Phytotherapy Research*. 2007;21(1):17–25.