



ROLE OF AYURVEDA IN PEDIATRIC NUTRITION AND NEUROCOGNITION

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ABSTRACT Pediatric nutrition and neurocognitive development are closely interlinked, as optimal nourishment during early years lays the foundation for lifelong health and intelligence. Malnutrition in neonate and infancy majorly affects gross somatic growth, neurodevelopment and intellectual impairment. Ayurveda, through its holistic principles, offers time-tested strategies to enhance Agni, Bala (strength), Medha (intellect), and overall Immunity. The integration of Ayurvedic practices like Angi Deepan, Lehana (supplementary formulations), Sanskaras (samskaras for brain stimulation), Ahar Vidhi Vidhan (rules of food intake), and Medhya Rasayanas offers promising benefits in pediatric nutrition and neurodevelopment. A well-balanced diet is required for overall growth, optimal brain functioning and development. Due to a higher basal metabolic rate, newborn and infant's nutritional requirement is higher than adults. A balanced diet can provide the necessary nutrients for body growth and cognitive development. This article explores Ayurvedic concepts related to child nutrition and cognitive health, highlighting classical references and clinical implications in pediatric practice.

KEYWORDS : Nutrition, Neurocognition, Medhya Rasayana

1. INTRODUCTION

Ayurveda plays important role in psychological, mental and physical growth. The first five years of a child's life are crucial for brain development and physical growth. Malnutrition, poor digestion, and improper feeding practices can result in delayed milestones, poor scholastic performance, and increased susceptibility to diseases. Nutrition and Neurocognition is strongly interlinked. Cognitive development is a complex and dynamic process. It encloses various aspects of mental functioning, including attention, memory, language, problem solving, etc. Childhood is the base of adulthood and it is an important stage of person's life. Ayurveda plays precise role in child care. The part of health measures are pre conception care, gestational care, birth care, neonatal care and so on. Ayurveda plays key role in nourishing Sharir, Manas and Atma. Ayurveda explained systematic and scientific way of diet schedule for infants by considering anatomical, physiological and nutritional aspects. Brain is an important part of nervous system. Ayurveda mentions that majja i.e. marrow/nervous system originates from meda dhatu which is formed from Ahara Rasa. The quality and quantity of Ahara Rasa affects majja dhatu which in turn have effect on brain performance. Ayurveda describes the importance of Snehana, Sanskara, and administration of Medhya and Balya drugs in children to promote healthy growth and intelligence.

2. Aims And Objectives

To study and evaluate the role of Ayurvedic principles and interventions in improving pediatric nutrition and neurocognitive development. To review classical Ayurvedic concepts related to pediatric nutrition and cognitive health.

3. MATERIALS AND METHODS

This paper explores the Ayurvedic approach to enhancing nutrition and neurocognition in the pediatric population, supported by classical texts like Charaka Samhita, Sushruta Samhita, Ashtanga Sangraha, Ashtanga Hridaya, Kashyapa Samhita, etc., and modern textbooks, research articles, Ayush Research Portal, PubMed, Google Scholar, etc.

These texts were studied to identify Definitions and types of nutrition (Ahara, Lehana), Pediatric-specific formulations and Medhya Rasayanas, recommended dietetic practices (Ahara Vidhi Vidhan) and feeding schedules, Drugs and dietary regimens supporting Medha (intellect) and Bala (strength).

Ayurvedic Interventions And Concepts Analyzed Agni

Proper digestion is very much important for absorption of essential nutrients from diet. Also gut health plays a major role in neurodevelopment as by gut-brain axis. Ayurveda mentions a concept called Agni (Digestive power) and specific dravya which boosts

digestion called Agni Deepan Dravya. According to Ayurveda, the quantity of food to be taken depends on the pattern of digestion (i.e. Agni).

Matru Stnanya

For a newborn, breast milk (Matru stnanya) is considered as Purna Ahara as mother's milk contains fats, protein, carbohydrates, antibodies, immunoglobulins to fulfil the baby's needs during the first six months. The immune system of newborn develops from birth by breast feeding. Mother's milk is important for overall nutrition and development, it also provides immunity and protects against several diseases. Acharya Kashyapa describes breast-feeding results in good growth, strength, longevity, and good health and does not cause any trouble or disease to the child. Ayurveda recommends breastfeeding up to 6 months of age and complementary feeding thereafter (after six months) in the form of Annaprashana /Phalaprashana samskara (a first-time food/fruit eating ceremony in children). Early initiation of breastfeeding, exclusive breastfeeding, avoiding bottle feeding, hygiene, and appropriate complementary feeding are essential factors for maintaining the nutritional well-being of children.

Ahar Vidhi

Acharya Kashyap describes Ahar as a Mahabhaishaja. It is observed that many diseases arise merely due to faulty dietary habit. In this context, the Ashta Ahar Vidhi Visheshayatana concept is considered ideal in today's lifestyle. Acharya Charak has described eight specific factors of dieting in a very systematic and scientific manner which is known as Ashta Ahara Vidhi Visheshayatana.

These Are Eight Particular Factors That Influence The Method Of Dieting Are -

1. **Prakriti/Swabhava**- Nature of food/ Quality of food.
2. **Karan** – Processing of food.
3. **Samyoga** – Combination of food.
4. **Rashi** – Quantity of food.
5. **Desha** – Habitat of food.
6. **Kala** – Time and seasonal variation.
7. **Upayoga Samstha** – Rules for dieting
8. **Upayokta** – The person who consumes the food.

Medhya Rasayan

Medhya Rasayana dravya stimulate memory, attention, and learning capacity. Ghrita preparations, particularly Brahmi Ghrita, act as carriers for crossing the blood-brain barrier and support brain nourishment. Brahmi (Bacopa monnieri), Mandukaparni (Centella asiatica), Shankhpushpi (Convolvulus pluricaulis), Yashtimadhu (Glycyrrhiza glabra), Guduchi (Tinospora cordifolia) are described as Medhya Dravya. To improve mental health along with immunity, formulations of herbs like Vacha, Brahmi, Jatamansi, along with honey and ghee are used. These formulations are antioxidant, immunomodulatory and also improves Agni.

Lehan

Lehan in early childhood period helps to promote growth, immunity, increase intellectual abilities by its karma like Agni Deepan, Balya. Many formulations are mentioned in Samhitas like Kalyanaka Ghrita, Brahmi Ghrita, Samvardhan Ghrita, Suvnaprashana (as described by Acharya Kashyapa) which can be used as for Lehan. It are also palatable for use in infants and children. In the first few years of life the rate of growth and development is very fast. There is need of extra amount of fats, carbohydrates and amino acids. Lehan Dravyas supplies carbohydrates, antioxidants to meet the demand of body.

Samskar

All Samskaras are helpful to gain strength, build immunity, health and life of the newborn. Jatkarma Samskar, Suvnaprashana Samskar gives benefits like good appetite, strength and brain power. For proper physical and mental growth, Ayurveda advised Phalaprashan and Annaprashan Samskar.

4. DISCUSSION

Ayurveda places great importance on Samskara (positive modifications), Lehana (supplementary feeding), and Ahara Vidhi Vidhana for child development. Concepts like Matru Ahara (mother's diet), Stanya quality (breast milk) and Annaprashana play foundational roles in child health. Additionally, Lehana with specific formulations during early childhood boosts digestion, immunity indirectly aiding brain function. Ayurveda also suggests that food should be Satvika, freshly prepared, warm, and easy to digest for better assimilation and nourishment.

Ayurveda, India's ancient system of medicine, plays a significant role in guiding dietary choices and recommending foods based on individual body types, seasons, and health conditions. This holistic approach to nutrition aims to maintain balance in the body and promote overall well-being.

Comparatively, modern science supports the role of essential fatty acids, micronutrients (like iron, zinc, B12), and protein in neurodevelopment, aligning well with Ayurvedic emphasis on sneha, poshak dravyas, and gut health.

5. CONCLUSION

Nutrition is the basic need for healthy life. Any failure in proper nutrition during childhood period may lead to physical and mental illness. Ayurveda provides a comprehensive approach toward pediatric nutrition and cognitive development. Ayurvedic interventions including Medhya Rasayanas, proper Ahara Vidhi, and early-life Samskaras are effective tools for optimizing a child's mental and physical development. Integrating these time-honored concepts with modern pediatrics can greatly enhance outcomes in child health and learning potential. The use of Medhya and Balya dravyas, contribute significantly to enhanced nutritional status and cognitive abilities in children. When applied properly, these principles can help address common pediatric issues such as low immunity, poor memory, hyperactivity, and learning disabilities.

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