



Review Article

AN AYURVEDIC CRITICAL REVIEW ON NUTRITIONAL DEFICIENCY DISORDERS IN CHILDREN

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Article info

Article History:

Received: 01-11-2021

Revised: 18-11-2021

Accepted: 02-12-2021

KEYWORDS:

Aahara,
Apatarpanjanya
Vyadhis, Nutritional
deficiency disorders,
Phakka,
Parigarbhika,
Balashosha, Karshya.

ABSTRACT

Ayurveda has two basic aims i.e., first preventive aspect rather than curative method. *Aahara* (food) plays very important role to maintain health of a person as it is one of the three sub pillars (*Tri-upastambha*) of Ayurveda. *Aahara* is the main source of energy and nutrition, also with therapeutic value and most important during post treatment period to regain the strength of body. *Aahara* not only nourishes the body but also nurtures the mind and soul, hence it is called as *Poornabramha* and *Aahara-sevana* (eating food) considered as a ritual in Ayurveda. Nutrition is always a basic and essential part for mankind. It has also positive effect on growth and development with cognitive function in children. Various health problems can be prevented through nutritious diet.

Malnutrition generally refers both to under nutrition and over nutrition diseases. Nutritional deficiency disorders are described in various Ayurvedic texts which can be correlated with *Apatarpanjanya Vyadhis*. Various *Acharya* of Ayurveda described diseases such as *Phakka*, *Parigarbhika*, *Balashosha*, *Karshya* etc in different *Samhitas* can also correlated to nutritional deficiency disorders. A critical review of these disorders provides different aspects of malnutrition and proper understanding of pathogenesis in terms of *Dosha - Dushya* which will give a valuable key for their effective management. This paper highlights the Ayurvedic review of nutritional deficiency related disorders in children.

INTRODUCTION

The main aim of Ayurveda is first, to preserve the health of healthy people and second, to treat illness and diseases^[1]. Nutritional disorders comprise of both undernutrition and over nutrition. Undernutrition is defined as insufficient food intake, poor absorption of nutrients and infectious diseases whereas the over nutrition causes by overconsumption of food. The former is referred as '*Aptarpanjanya Vyadhi*' and the later as '*Santarpanjanya Vyadhi*' in Ayurveda. Abnormal nutrition causes more than half of the, nearly 11 million deaths each year among children under age five^[2].

Nutrition deficiency interferes with growth (both physical and mental) and development may predispose to many health problems such as infections and chronic diseases and can be particularly serious in children and delay to recovering from diseases. Ayurveda describes malnutrition under *Apatarpanjanya Vyadhis*^[3]. Based on severity and aetiology these disorders may be considered as *Karshya*, *Phakka*, *Parigarbhika* and *Balashosha*.

Aahara (food) is one of the *Trayopstambha* of life as per Ayurvedic classics^[4]. Indian traditional system of medicine has assimilated various explanations regarding this vital pillar of life. The transforming unit from 'food' into nutrition is termed as '*Agni*' or digestive fire, which forms the edifice upon which the Ayurvedic system of medicine is built^[5]. According to *Acharya Charaka* over thin (*Atikrushya*) persons are described under eight despicable persons i.e., *Ashtau-ninditiya Purusha*.^[6]

AIMS AND OBJECTIVES

A critical review of various Nutritional Deficiency Disorders with respect to Ayurvedic context in children.

Access this article online

Quick Response Code



<https://doi.org/10.47070/ijapr.v9i11.2137>

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MATERIALS AND METHODS

Classical texts books of Ayurveda, different internet sites, journal publications and various clinical studies are searched and analysed.

Nidana (Etiology): *Nidana* (causes) of malnutrition in terms of classical texts.^[7]

Aaharaja	Viharaja	Manasik
<i>Katu & Tikta Rasa</i>	<i>Kriya Atiyoga</i> (excess exercise)	<i>Chita</i> (stress)
<i>Ruksh Annapan</i>	<i>Ratri Jagrana, Vata & Atapa Sevana</i>	<i>Bhaya</i> (fear), <i>Udvega</i> (depression)
<i>Alpa Bhojana,</i>	<i>Malnutradi Nigraha</i>	<i>Ati krodha</i> (anger)

Factors Involve in Pathogenesis of Nutritional Deficiency Disorders (*Samprapti Ghatak*)

Dosha – Vata

Dushya – Rasa

Srotas – Rasavaha

Srotodushti – Sanga

Adhishthana – Pakvashaya

Vyaktisthana – Sampurna Sharir (whole body)

Aptarpanjanya Vyadhi (Malnutrition in Children)

The following diseases can be categorized as nutritional deficiency disorders in children.

Karshya

It is the condition of excessive starvation.

Etiology

Rukshannapana (indulgence in rough food and drinks), *Langhana* (fasting), *Pramitashana* (little diet), *Kriyatiyoga* (excessive subjection to evacuative therapy), *Shoka* (grief), *Chinta* (worries), *Bhaya* (fear), *Shrama* (excessive physical and mental activity), *Vega-Nidra-Trusha-Kshudha-nigraha* (suppression of natural urges, such as- sleep thirst and hunger), *Atishrama*, *Ati maithuna*, *Atisnana abhyasa* (excessive exercise, sexual intercourse, excess bath), *Ruksha udvartan* (excess non-unctuous anointing to the persons), *Snana abhyasa* (indulgence in bath), *Prakruti* (constitution), *Beeja Dosha* (heredity), *Jara* (old age), *Vikar-anushaya* (continued disorder) and *Krodha* (anger) make a person lean^[8].

Clinical Features

The lean person has *Shushka-sphic*, *udar*, *greeva* (dried up buttocks, abdomen, neck), *Dhamanijala santataha* (prominent vascular network) *Twagasthshesho*, *Ati krusha* (remnant of skin and bone), *Sthoola parva* (thick joints), *Vyayam Atisauhityam* (the over lean does not tolerate physical exercise, over saturation), *Kshutpipasamay-aushadham* (dose not tolerate high in toxicity of hunger, thirst,

disease, drugs), *Ati-shitoshna-maithunam* (too much of cold, heat and sexual intercourse).^[9]

Treatment

Light (*Laghu*, *Supachya* i.e., *Raktashalishashtik* [old rice]) and nourishing balanced diet is prescribed for the nourishment of the *Karshya* patients. Such kind of diet act as stimulants of digestive power and provides nourishment due to their nutritive property. Sleep, joy, comfortable bed, contentment, tranquility of mind, abstinence from anxiety and physical exercise, pleasant sights, meat soup of domestic, marshy and aquatic animals, curd, ghee, milk sugarcane, wheat, sweet preparations, regular oil massage, use of white apparel, elimination of *Doshas* in time (*Nidan parivarjana*) and administration of rejuvenating and *Brinhana* (nutritive) drugs remove emaciation and bring out nourishment in the body^[10].

Balshosha

This disease of children is described by *Acharya Vagbhatta*^[11]. It is caused due to excessive sleep-in day hours, excessive intake of cold water and excessive intake of *Kapha* vitiated breast milk which causes an imbalance in *Doshas* and increase in *Kapha* in baby. This *Dushit Kapha* causes obstruction in *Rasavaha Srotas* of child, which are the channels for nutrition, thus causing undernutrition. It is characterized by *Arochaka* (lack of appetite), *Pratishyay* (recurrent respiratory infections), *Jwara* (fever), *Kasa* (cough), *Snigdhatata* and *Shuklata* of face and eyes and ultimately leading to emaciation of muscles. So according to sign and symptoms of the *Balshosha* disease can be correlated with Marasmus Kwashiorkor. To combat *Balshosha*, *Nidanparivarjana*, *Srotoshodhan*, *Doshashaman*, *Snehapana*, use of anabolic herbs and preparations along with appetizers is recommended. These all efforts are made to clear the obstructed channels and to purify the *Kapha* vitiated milk in the mother and provide nutrition to baby.

Phakka

The word 'Phak' indicates the slow movements or creeping like a snail. It means if the child remains incapable of walking independently even after attaining of one-year age, he is said to be suffering from *Phakka Roga*.

Etiology

The *Laxanas* of *Phakka Roga* are; *Jwara*, loss of *Dhyuti*, *Sphik*, *Bahu* and *Uru*, excess growth of abdomen, *Peetakshi*, *Angaharsha*, weakness, excess of *Mutra* and *Pureesha*, *Manda cheshta*, irritability, dullness and excessive nasal discharges.

Acharya Kashyapa^[12] has described three types of *Phakka* i.e., *Ksheeraj*, *Garbhaj* and *Vyadhij Phakka*. *Ksheeraj Phakka* is similar to *Bal Shosha* and is caused by breast milk vitiated by *Kapha dosha*. *Garbhaj phakka* is caused when a mother conceives again and

whose baby is still exclusive breastfeeding which results in quantitative and qualitative deficiencies of her breast milk. The child becomes very weak if fed by such milk. *Vyadhij Phakka* is caused by when child is not taken care properly (*Anatha shishu*) and may suffer from various chronic diseases and unhygienic conditions. It manifests as severe form of malnutrition and represents grades of Marasmus with clinical features such as loss of strength, wasting of buttocks, thighs and upper limbs, pot belly, big head appearance, slow and feeble movement, irritable excess production of *Dhatu mala* (nasal secretions) etc.

Treatment

The treatment depends on the cause of disease i.e., if there is milk impurity, the mother should be treated and in case of chronic diseases, treatment of such diseases should be given. The treatment of *Phakka* includes *Snehana chikitsa* with *Kalyanaka ghrita* followed by *Shodhana chikitsa*. Administration of drugs like *Raasna*, *Punarnava* having property of activating the neuromuscular response along with *Samvardhana ghrita* is done. Nutritious diet also should be prescribed like ghee, soups and *Mamsa rasa*. *Raj Taila Abhyanga* is advised to improve muscle tone of body. For regaining locomotive ability rehabilitative measures like *Tripad chakra ratha* (tricycle) are advised.

Parigarbhika

It is described by *Astanga Sangraha* which states that when a baby feeds on milk of a pregnant mother or there is an abrupt stoppage of breast milk to baby due to pregnancy of mother, the baby suffers from *Parigarbhika*^[13]. It manifests as *Aruchi*, *Agnimandya*, *Tandra*, *Karshya*, *Vamthu*, respiratory illnesses, lethargy, abdominal distension. *Agnideepan* (correction of digestion and appetite) is the main stay of treatment in *Parigarbhik* disease. This is achieved by small doses of *Ghrita* made of *Pippali*, *Pippalimula*, *chitak*, *Katuki* etc. Various *Lehya* preparations, *Jeevaniya* herbs and milk are also prescribed.

Sushka Revati

Sushka Revati is one of the types of *Balgrahas* in children which represents infectious spectrum of diseases resulting *Sarvanga kshaya* (emaciation). It characterized as progressive emaciation of all body parts, diarrhea (loose green stool), anorexia, abdominal nodular swellings, appearance of prominent veins over it and geographic tongue^[14]. Child shows progressive emaciation with features of hair fall, weak voice, skin changes and excessive cry. General line of management includes personal hygiene measures anointment, bath and fumigation, isolation and disinfection of surroundings, *Sthanik chikitsa* like *Udvardana* with *Vacha*, *Hingu*, *Ashwagandha* and *Sarshap churna*, *Lepan* with cow dung and *Abhyantarik chikitsa* with various drugs like *Swarna basantmalti*,

Shilajatvadi lauha, *Shringa bhasma*, *Vardhaman pippali* and medicated *Ghrita* are advocated.

DISCUSSION

The various diseases described above represent a wide spectrum of nutrition deficiency disorders. *Karshya* disease is a state of wasting (low weight for height) and stunting (low height for age) due to chronic malnutrition. According to *Acharya Charaka Ati Karshya* persons are described under *Ashtauninditiya* (eight despicable persons) along with over obese (*Ati Sthula*) persons. *Bal Shosha* can be correlates with caloric malnutrition and gives the child a marasmic appearance with white puffy and slimy face. *Parigarbhika* disease can be correlated with protein malnutrition (*Kwashiorkar*). It refers to the disregarded child consequent to the pregnancy. Among three types of *Phakka*, *Ksheeraj Phakka* and *Garbhaj Phakka* have causes and symptoms similar to *BalShosha* and *Parigarbhika* respectively. *Vyadhija Phakka* may be correlates with protein energy malnutrition due to low intake of nutrients, malabsorption and chronic illness. This adversely affects the growth and development of child resulting in delayed milestones. *Shuska Revati* one *Graha* (demon) affecting the child represents infectious spectrum of disease resulting *Sarvanga Kshaya* (emaciation) and child becomes emaciated even though consuming food of many kinds.

All the disease described in Ayurveda texts is related to each other and possible to correlate to various malnutrition disorders. According to World Health Organization (WHO), malnutrition is described as a "global problem" having adverse effects on the survival health performance and progress of children^[15]. The effects are of the highest order in the developing countries. Care of nutritional needs is required at three stages; Nutrition during pregnancy, nutrition in infancy and nutrition in childhood. Foetal nutrition is totally dependent on maternal nutrition. The most significant in the preventive measures for this disease is "nutrition education" which including good antenatal care, encouragement to the mothers to breastfeed the infants, complementary feeding, supplements should be combination of cereals, protein rich foods and fruits, National Nutrition Programmes etc.

CONCLUSION

Nutritional deficiency disorder is one of the major health problems in the world. Deficiency in nutrition inflicts long term damage and malnourished children are more prone to infectious diseases. Ayurveda has precisely described the aetiology, clinical features and treatment of malnutrition. A thorough study of the same equips us with a better understanding and enables to all for an early diagnosis,

management and prevention of nutritional deficiencies.

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Cite this article as:

Singhade Sapna Raoji, Lanjewar Swati Rajkumar. An Ayurvedic Critical Review on Nutritional Deficiency Disorders in Children. International Journal of Ayurveda and Pharma Research. 2021;9(11):94-97

<https://doi.org/10.47070/ijapr.v9i11.2137>

Source of support: Nil, Conflict of interest: None Declared

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