



NUTRITIONAL PSYCHIATRY IN AYURVEDA

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ABSTRACT

Introduction: Ayurveda defines health as a total of equilibrium of Dosha, Dhatu, Malakriya and pleasantness of Atma, senses and Mind. Where mind also plays crucial role in overall wellbeing of person. Hence mental health is gaining its momentum in terms of equality of life in the current world. Ayurveda given more importance to mental health a separate branch is dedicated for the prevention and management of psychiatric illness. In India prevalence of psychiatric disorders varying from 9.5 to 370/1000 population. Mental state is also reflected by the food what we take. **Materials and method:** A Systematic review and critical analysis of Ayurvedic literature and related article published on national and international journal. Observation and Results: Acharaya Bhavaprakasha and Yogaratnakara has specifically mentioned about Pathyas for Manasika in the context of Unmada and Apasmara Chikitsa those Pathyas can be further categorized into different Aharavargas. **Conclusion:** Nootropics is newly emerging branch in modern science, nootropic or smart drugs are well-known compounds or supplements that enhances the cognitive performance. They work by increasing the mental function such as memory, creativity, motivation, and attention. Many nootropics are described in Ayurveda which considered as Medya, Bhuddi Vardhaka and Smritikara etc.

KEYWORDS: Psychiatric nutrition, Manas, Ahara, Ayurveda, Manasika Vikara.

INTRODUCTION

Ayurveda defines health as a total of equilibrium of *Dosha, Dhatu, Malakriya*, pleasantness of *Atma*, senses and Mind.^[1] Where mind also plays crucial role in terms of overall wellbeing of person. Hence mental health is gaining momentum in terms of holistic health of life in the current world.

According to WHO Health is a state of complete physical, mental and social well-being not merely absence of disease or infirmity. Here also mental health has been given a great importance; hence it is an inseparable dimension of health.

Ayurveda gives more importance to mental health and separate branch is dedicated in aspect of prevention and management of psychiatric illness. It also attributes manas as *Atindria* which is supreme among all *Indria*'s and also considered as *Ubhaendria* which implies its role as both *Jnanendria* and *Karmendria*.

Epidemiological studies report's prevalence rates for psychiatric disorders varying from **9.5 to 370/1000 population** in India.^[2]

Ayurveda advocates countless preparations for management of psychiatric disorders along with *Panchakarma* and non-pharmacological intervention's like *Sadvritta*(good conducts), *Achararasayana*, *Ahara* (food) and *Vihara*(activity).

"*Yatha anna tatha mana*" means mental state is also reflected by the food what we take.

"*Aharashuddhau Shatvasuddhi Shatvasuddhau Druvo Smriti*"^[3] signifies that wholesome food is responsible for memory enhancement.

Acharya Charaka explains wholesome food is responsible for the formation of body and unwholesome is responsible for disease.

Acharya *Kashyapa* further explains the importance of *Ahara* as no medication equalent to food it is possible to make a person disease free just by proper food.

Where has Acharya *Sushruta* states that a proper diet enhances "*Smrithi*" i.e memory. According to *Chandogya Upanishat* "*Anu Bhava*" of *Ahara* forms

Manas. so proper diet is very important for normal functioning of mind.

In contemporary science the new concept is emerged called Gut-Brain axis – which means healthy gut function leads to normal functioning of CNS and Vice versa.

Recent data has identified that Gut microbiota play's a key role in the response to stress, anxiety, depression and cognition. High quality diet regulates the microbiota and reduces stress⁴. Therefore intake of qualitative food leads to reduction of stress and there by prevents many psychological disorders.

MATERIALS AND METHODS

A systematic review and critical analysis of *Ayurvedic* literature and related articles published on national and international journals.

The E - Samhithas and articles published regarding mental health, *Ahara* related to *Manas* were the primary source for this research.

RESULTS AND DISCUSSION

Relationship between body and mind

All the three *Sharirika Dosha* (*Vata*, *Pitta* and *Kapha*) i.e Bio-energies are related to *Satva*, *Raja* and *Tama*,

Manasika Vikaras^[5]

Manasavikara (neurosis)	Nanatmaja manasavikara	Ubhayatmaka manasavikara	Kamajwara (fever caused by passion)
Abhyasuya (jealousy): bhaya (fear), chittodvega (anxiety): dainya (meanness of inferiority complex), harsa (exhilaration) kama(desire); krodha (anger): lobha (greed): mada (arrogance): mana (pride): moha (confusion): soka (grief): visada (anguish): and irshya (envy).	Chittodvega (anxiety) visada (anguish) asabda sravana (auditory hallucinations) tama (withdrawal) atipralepa (prating) aswapna (insomnia) anavasthitacittatwa atrpti (discontentedness) tandra (stupor) atinidra (excessive sleep) bhrama (confusion) Ch. Su.20	Unmade (psychosis) Apasmara (epilepsy) Apatanaka, apatantraka (hysteria) atatwabhinivesa (obsessive syndrome): madatyaya (alcoholic psychosis): sanyasa (coma)	krodhaja jwara (fever caused by anger) bhayaja atisara(diarohoea caused by fear) sokaja atisara (diarohoea caused by grief)

Nidana for Manasika Vikara

Ahara can also be a major cause for the manifestation of above *Manasika Vikara*. Example: *Viruddha*, *Dushita*

qualities of mind thereby influence the normal functioning of mind.

MANAS

Site of Manas

1. According to *Acharya Bhela Shiras* is the site of *Manas*.
2. According to *Acharya Vagbhata*, *Hridaya* is the site of *Manas*.

Hridaya is also site for *Rasavaha Srotas*, so ingested food has direct impact on *Manas*.

Gunas of Manas

Satva is the *Guna* of mana whereas *Raja* and *Tama* are *Manasika Doshas*.

Ahara also plays critical role in influencing 3 *Gunas* of *Manas*.

In *Bhagavat Geeta* there is a classification of food based on its action on 3 *Gunas* VIZ. *Satvika*, *Rajasika* and *Tamasika Ahara*.

and *Ashuci Ahara* causes *Unmadha*⁶. *Ahita Ahara* leads to *Apasmara*.^[7]

Pathya in Manasika Vikara

Acharay Bhavaprakasha and Yogaratnakara has specifically mentioned about Pathyas for Manasika in the context of Unmada⁸ and Apasmara Chikitsa,¹⁹ those Pathyas can be further categorized into different Aharavarga's as follows.

1. *Shakavarga* (vegetable): *Patola*(Tricosanthes cucumerina), *Bhrami* (bacopa monnieri), *Shobhanjanam* (moringa oleifera) *Kakamachi* (Solanum nigrum), *Vastuka* (C. album), *Tanduliyaka* (amarantus spinosus)

2. *Dhanyavarga*(cerelas and millets): *Raktha/Aruna Shali*(red rice), *Godhuma*(wheat), *Mudga*(green gram)
3. *Phalavarga* (fruits): *Draksha*(grapes), *Panasa*(jack fruit), *Matulunga*(Citrus fruits), *Narikela*(coconut), *Kapittha* (wood apple), *Kushmanda* (cucurbita pepo), *Dhatri* (Indian gooseberry), *Haritaki* (terminalia chebula).
4. *Gorasavarga* (milk and milk products): *Ksheera* (milk), *Navaneetha*(butter), *Ghrita*(ghee)
5. *Paniyavarga* (liquied group): *Gangambu* (rain water), *Madya* (liquor).

Shaka Varga

Name	Rasa (tase)	Guna (property)	Virya (potency)	Vipaka (tase of end product)	Dosa Karma	Pradhana Karma (action)
<i>Patola</i> ^{10a}	Tikta, (bitter) <i>Katu</i> (spicy)	<i>Laghu</i> , (light) <i>Ruksha</i> (dry)	<i>Ushna</i> (hot)	<i>Katu</i>	<i>Kapha Pittahara</i>	<i>Hridya</i> (good for heart)
<i>Bramhi</i> ^{10b}	Tikta (bitter) (<i>Kashaya</i> (astringent))	<i>Lagu, Sara</i> (mobility)	<i>Ushna</i>	<i>Madhura</i>	<i>Tridosahara</i>	<i>Medhya</i> (increases memory)
<i>Shobhanjanam</i> ^{10c}	<i>Katu</i> , (spicy) <i>Tiktha</i> (bitter)	<i>Ruksha</i> , <i>Tikshna</i> (quick)	<i>Ushna</i>	<i>Katu</i>	<i>Vata Kapha Hara</i>	<i>Hridya Dipana</i> (appetizer)
<i>Kakamachi</i> ^{10d}	Tikta (bitter)	<i>Lagu, Snigdha</i> (unctuous)	<i>Anushna</i>	<i>Katu</i>	<i>Tridosahara</i>	<i>Rasayana</i> (immune booster)
<i>Vastuka</i> ^{10e}	<i>Madhura</i> (sweet)	<i>Laghu</i>	<i>Ushna</i>	<i>Katu</i>	<i>Tridosahara</i>	<i>Dipana Pachana</i> (increases digestion)
<i>Tanduliyaka</i>	<i>Madhura</i> (sweet)	<i>Ruksha</i> ,	<i>Shita</i> (cold)	<i>Madhura</i>	<i>Kaphapittahara</i>	<i>Madagna</i> (anti-intoxicant) <i>Vishagna</i> (anti-toxic)

Dhanya Varga

Name	Rasa	Guna	Virya	Vipaka	Dosa Karma	Pradhana Karma
<i>Raktha Shali</i> ^{11a}	<i>Madhura</i>	<i>Snigdha Laghu</i>	<i>Shita</i>	<i>Madhura</i>	<i>Tridosahara</i>	<i>Vrishya</i>
<i>Godhuma</i> ^{11b}	<i>Madhura</i>	<i>Guru Snigdha</i>	<i>Shita</i>	<i>Katu</i>	<i>Vata Pittahara</i>	<i>Jeevana</i> (enhances life) <i>Sthairyakrit</i>
<i>Mudga</i> ^{11c}	<i>Kashya</i> <i>Madhura Rasa</i>	<i>Laghu Guna</i>	<i>Shita</i>	<i>Katu</i>	<i>Kapha pittahara</i>	<i>Chakshushya</i> (improves vision)

Phala Varga

Name	Rasa	Guna	Virya	Vipaka	Dosa Karma	Pradhana Karma
<i>Draksha</i> ^{12a}	<i>Madhura</i>	<i>Snigha Guru and Mrudu</i>	<i>Shita</i>	<i>Madhura</i>	<i>Vata Pittahara</i>	<i>Vrishya Brimhana</i> (body building).
<i>Panasa</i> ^{12b}	<i>Madhura</i> <i>Kashaya</i>	<i>Guru Snigdha</i>	<i>Shita</i>	<i>Madhura</i>	<i>Pitta Vatahara</i>	<i>Balya</i> (increases strenght) <i>Bhrimhana</i> (nourishing)
<i>Matulunga</i> ^{12c}	<i>Amla Madhura</i>	<i>Laghu Snigdha</i>	<i>Ushna</i>	<i>Amla</i> (sour)	<i>Vata Kaphahara</i>	<i>Hridya, Deepana</i>
<i>Narikela</i> ^{12d}	<i>Madhua</i>	<i>Guru Snigdha</i>	<i>Shita</i>	<i>Madhura</i>	<i>Vata Pittahara</i>	<i>Hridya</i>
<i>Kushmanda</i> ^{12e}	<i>Madhura</i>	<i>Laghu Snigdha</i>	<i>Shita</i>	<i>Madhura</i>	<i>Pitta Vatahara</i>	<i>Vrishya Bhrimhana</i>
<i>Dhatri</i> ^{12f}	<i>Amlapradhana Pancharasa</i>	<i>Ruksha</i>	<i>Shita</i>	<i>Madhura</i>	<i>Tridosha</i>	<i>Hridya Rasayana</i>

Gorasa Varga

Name	Rasa	Guna	Virya	Vipaka	Dosa Karma	Pradhana Karma
<i>Ksheera</i> ^{13a}	Madhura	Guru Snigdha	Shita	Madhura	Vata Pittahara	Jivaniya, Hridya and Buddhiprabhodhana (improves memory)
<i>Navaneeta</i> ^{13b}			Shita		Vata Pittahara	Vrishya
<i>Ghritha</i> ^{13c}			Shita		Vata Pittahara	Dhi(improves retention power), Smrithi and Medha Vardhaka (memory booster)

Paniya Varga

Name	Rasa	Guna	Virya	Vipaka	Dosa Karma	Pradhana Karma
<i>Gangambu</i> ^{13d}	Avyakta (no taste)	Laghu	Shita		Tridosha	Jeevana, Hridya and Buddhiprabodhan

Shaka Varga

Patola: *Tricosanthes cucumerina* is a rich source of nutrition It is highly constituted with proteins, fat, fibre, carbohydrates, vitamin A and E. The total phenolics and flavonoids content is 46.8% and 78.0% respectively. The fruit is rich in Vitamin C and E. The crude protein content is 30.18%. The predominant mineral elements were potassium (121.60 mg 100-1 g) and phosphorus (135.0 mg 100-1 g). Other elements found in fairly high amounts are Sodium, Magnesium and Zinc.^[14]

Bramhi**Contains**

Saponins: Bacoside A, bacoside B, bacopasaponins, D-mannitol, Flavonoids: Apigenin, luteonin Alkaloids: Brahmine, herpestine, hydrocotyline Glycosides: Asiaticoside, thanakunicide Phytochemicals: Betulinic acid, betulic acid, wogonin, oroxindin, stigmas Sapogenin: Jujubacogenin, pseudojujubacogenin.^[15]

Studies has showed that Bramhi is having antidepressant, anti-stress activity and improves the learning capacity and memory.

Shobanjanam

Its leaves have the calcium equivalent of four times that of milk, the vitamin C content is seven times that of oranges, while its potassium is three times that of bananas, three times the iron of spinach, four times the amount of vitamin A in carrots, and two times the protein in milk Besides Moringa is also suggested as a valuable supplement of dietary minerals. The pods and leaves of Moringa contains high amount of Ca, Mg, K, Mn, P, Zn, Na, Cu⁵. Potassium, which is essential for the functioning of the brain and nerves.^[16]

Kakamachi

Solanum nigrum revealed the presence of carbohydrates, flavonoids, saponins, tannins, alkaloids, phenols and steroids. Studies has been found that *Kakamachi* is having Anti-Stress effect and anti-convulsant activity.^[17]

Vastuka

C. album. contained very high degree of nitrogen, phosphorus, potassium, calcium, magnesium, iron and manganese.

C. album leaves are rich in proteins with a high proportion of essential amino acids such as lysine, leucine, and isoleucine, and significant amounts of calcium and vitamin A. high content of vitamin C, carotenoids iron and has high amount of amino acids, leucine, Isoleucine, lycine. Polyphenols are important components of *C. album*.^[18]

Tanduliyaka

Analysis of the leaves and tender stalks gave moisture 84.5; fat 0.5, protein 3.0, carbohydrates 8.1; crude fibre 1.3 and ash 2.6%, calcium 560.0, phosphorous 65.0, Iron30.5, Nicotinic acid 0.3; and ascorbic acid 30mg/100gm. The leafy vegetable is a very good source of calcium The leaves contain large amount of oxalic acid, it also contains high concentration of tocotrienols, a rare form of vitamin E.^[19]

Dhanyavarga**Raktha Shali**

Red-coloured rice varieties are known to be rich in iron and zinc.

Red and black rice get their colour from anthocyanin pigments, which are known to have free radical scavenging and antioxidant capacities, as well as other health benefits.^[20]

Godhuma

Carbohydrates viz, Starch, Sugars, Cellulose, Hemicellulose.

Minerals: Iron, Phosphorus, Calcium, Magnesium, Manganese, Copper, Zinc, Potassium, Sodium, and traces of cobalt.

Vitamins: Thiamine, Riboflavin, Niacin, Pantothenic acid, Vitamin B6, Folate (B9), Vitamin E, Vitamin K.

Proteins: Amino acids like Arginine, Histidine, Leucine, Isoleucine, Lysine, Methionine, Phenylalanine, Threonine, Tryptophan, Valine. Lipids and Fats: Palmitic, Stearic, Oleic, Linoleic, Linolenic etc. Enzymes like Amylase, Phytase etc are also present Dietary Fibres, Selenium etc. Also contains Flavonoids, Phenolics, and Resins.^[21]

Mudga

It is rich in Carbohydrates and is a very good source for minerals like Potassium, Magnesium, Calcium, Phosphorus, and iron. Vitamins like Carotene, Thiamine, Niacin, Riboflavin, Ascorbic acid and Folic acid are also present in Mung. the best sources for proteins and constitutes a number of essential amino acids such as Arginine, Histidine, Lysine, Tryptophan, Phenylalanine, Leucine, Isoleucine, Tyrosine, Valine, Threonine, Cystine and Methionine. And also contains flavonoids.^[22]

Phala Varga

Panasa

Jackfruit is rich in vitamin C. Moreover, it is one of the rare fruits that is rich in B-complex group of vitamins and contains very good amounts of vitamin B6 (pyridoxine), niacin, riboflavin, and folic acid. Jackfruit flesh and seeds contain more protein, calcium, iron, and Thiamine.

Jackfruit contains amino acids like arginine, cystine, histidine, leucine, lysine, methionine, threonine, and tryptophan phytochemicals such as carotenoids, flavonoids, volatile acids sterols, and tannins Jackfruit is also rich in potassium. Niacin in jackfruit is necessary for energy metabolism, nerve function. The flesh and seeds of jackfruit are considered as a cooling and nutritious tonic.^[24]

Jack fruit used has a brain tonic

Matulunga

Citrus fruits and juices have long been recognized to contain secondary metabolites including antioxidant such as ascorbic acid, flavanones, phenolics and pectin that are important to human nutrition. rich source of naturally occurring flavonoids.^[25]

Narikela

Research has found that Albumin fraction composed of aspartic and glutamic acid, alanine, serine, threonine, valine, leucine, isoleucine, methionine, cysteine, proline, and hydroxyproline. Globuline fractions contained lysine and arginine. Coconut milk contains histidine, arginine, lysine, tyrosine, tryptophan, proline, leucine and alanine. Due to this it act has CNS depressant anti convulsions. There it will be help full in *Manasika Vikaras* like *Cittodvega*, *Unmada* etc.^[26]

Kapittha

Kapittha contains pectin, fibers, calcium, vitamin B and vitamin C, 28% protein. The concentrations of leucine,

isoleucine, phenylalanine, tryptophan, valine and threonine were found to be present in higher amount in fruit and seed. *Kaitha* pulp is rich in several mineral such as calcium, phosphorus, iron, zinc. Calcium is crucially required for the rigidity of the skeleton and neuromuscular functions, *Kaitha* pulp also has antioxidant property. Studies has showed that Neuroprotective Effect Neurobehavioral parameters like motor performance are improved after the supplementation of *Kaittha* extract.^[27]

Kushmanda

The major constituents of *Benincasa hispida* fruits were volatile oils, flavonoids, glycosides, sacchrides, proteins, carotenes, vitamins, minerals, β -sitosterin and uronic acid.^[28]

Studes has been found that *Kushmanda* having anti-convulsant activity, Anti-Depressant activity, Nootropic activity anti-amnesic effect in model of memory.^[29]

The pulp of pumpkin with seed (2 seeds for one year old child) is ground to a paste with fresh red rice gruel (1/2 glass). Castor sugar / jaggery is mixed to it and consumed in the morning. This can also be taken in the form of *Halu* (milk) *Kashaya*. This facilitates proper development of brain nerves in children.^[30]

Amalaki

good source of Vitamin C; carotene, nicotinic acid, riboflavin, D-glucose, D-fructose, myoinositol and a pectin with D-galacturonic acid, D-arabinosyl, D-xylosyl, L-rhamnosyl, D-glucosyl, D-mannosyl and D-galactosyl residues, embicol, mucic, indole acetic acid. Research has been found that Amalaki Act has neuroprotective.^[31]

Draksha

Grape seeds contain flavonoids (4–5%), Grapes are rich in polyphenols and 60–70%.

Nervous system: Due to their property of alleviating *vata*. the use of grapes is recommended as nervative. It boosts memory power and acts as a brain tonic. Raisins can relieve stress, anxiety and clams the mind Raisins can relieve stress, anxiety and clams the mind. The administration of grape seed extract to aged rats increased memory performance.^[32]

Gorasa Varga

Godugdha

It contains protein, fat, carbohydrate, minerals like calcium, phosphorus, iron, ang vit A, thiamine, riboflavin, niacin, vitamins C.^[33]

Navaneeta

Include fat 81.1%, carbohydrate 0.1%, protein 0.9%, ash 2.1%, and water 15.9%. Fat: Butter has a saturated fat content around 51.4%, with saturated fats, such as palmitic and stearic acid, stearic acid is beneficial to

health and lowers the level of low-density lipoprotein (LDL) in blood it contains amino acids like Glutamic acid, leucine, and pro-line. Major minerals, such as calcium, magnesium, and potassium, vitamins such as vitamin A, carotene, and vitamin K.^[34]

Gogrita

Ghee is known to have antioxidant property which acts upon the degenerative brain cells and repair them.^[35]

According to Ayurveda, *Ahara* is prime factor for overall health includes mental health. According to modern all the nutrients are necessary for brain growth and key nutrients that support neurodevelopment includes protein, iron, choline, folate, iodine, vitamin A, D, B6 and B12 and long chain polyunsaturated fatty acids⁴. Neurotransmitters are made of amino acid so proper quantity of protein is essential. Iron is very essential for brain development and function. Iodine deficiency related with retarded physical development and impaired mental function; folic acid is very necessary for normal development of nervous system in fetus during pregnancy. carotenoid act as potent antioxidant prevents the oxidative stress. Vitamin B6 deficiency related with irritability, poor memory, stress, and depression. Vitamin B12 deficiency leads to confusion and poor memory. Fat is essential for the structure of brain and its functioning. Above mentioned *Ahara Dravyas* are rich in these nutrients. Most of them are *Hridya, Rasayana, Brimhana Jeevana, Medhya, Smritikara* and *Budhiprabhodhana* thereby they are helpful in preventing many psychological disorders and helps in proper functioning of brain and nervous system. Ayurveda considered food as one among three *Upastambha* (tree pillars of the body) and gives utmost importance to food and it's way of consuming food. By consuming all the above food articles with the principles explained in Ayurveda like *Matravat Bhojana* (proper quantity of food), *Kaalanusara Bhojana* (food at proper time), *Dvadasha Ashana Pravichara* (rules regarding food intake) and *Ashtavidha Ahara Vidhi Visheshayatana* (rules to take food) etc. Which are the key factors that connects all the food articles to obtain highest level of mental and physical health.

CONCLUSION

Nootropics is newly emerging branch in modern science. Nootropic or smart drugs are well-known compounds or supplements that enhances the cognitive performance. They work by increasing the mental function such as memory, creativity, motivation, and attention. Many nootropics are described in Ayurveda which considered as *Medhya, Bhuddhi Vardhaka* and *Smritikara*.

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