Evolving concept of diet from ethnicity to modernity

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Abstract

"Ahara" is considered to be an important term in Ayurveda and it helps to prevent and manage a wide range of disorders like seeds of barley, wheat, beans are prescribed for diabetes mellitus (madhumeha) etc. The food with incompatible or contradictory qualities has poisonous effect on the body which aggravates various disorders. According to ayurveda there are some dietetic variations according to season, and different tastes also possess specific biological activity affecting physiology and nutritional impact. The recipes for clinical nutrition portrays several form of diets with clinical properties, which certainly play a vital role in prevention and management of diseases. But now our today's diet is drastically changed. The objectives of this review is to summarize traditional foods and their dietary guidelines which are prescribed in Ayurveda and to investigate how our diet concept transfigure from ethnicity to modernity. This study establishes that to survive from present health maladies we have to take our country's traditional ayurvedic system which needs to serve as inspiration for today's society.

Keywords: Seasonal dietetics, Incompatible diet, Interventions, Disease specific diet, Junk food.

Introduction

Centuries and centuries ago, cavemen ate from the earth- fresh vegetables, fruits, other natural and unprocessed, newly-grown, sound food. After the cave age our country has reveal the dietetics in Ayurvedic practices i.e. traditional foods and their dietary guidelines are prescribed in Ayurveda.4 The term Ayurveda consists of two words – ayu (life) and veda (knowledge), thus, deals with various angle related to health and wellbeing in their diverse aspects, such as happy life, to uphold happiness, and longevity.⁵ There is so much resemblance to ayurvedic dietetics and traditional foods that many of the traditional health foods in India can be called ayurvedic foods. Indian traditional foods are also recognized as functional foods because of the presence of functional components such as body-healing chemicals, antioxidants, dietary fibres, and probiotics. These functional molecules help in weight management, and blood sugar level balance and support immunity of the body. Use of Hita Ahara (wholesome diet) supports health and longevity and Ahita Ahara (unwholesome diet) leads to manifestation of different disorders.

Food practices according to Indian old literature

Dating back to Indian civilizations and Indian old literature, namely Bhagavadgita, Ramayana, and

Manusmriti, every community that lived in India had a dictinct and separate food belief system. Most of these, however, have been inspired by Aryan beliefs and practices. The four Vedas, namely Rigveda. Samaveda, Yajurveda, and Atharva veda, mark out different cereal grains and their use in our daily life. Barley became the Aryans' introductory staple food, and is also mentioned in the Rigveda. The most liked lentils used were red lentils, green lentils, and black lentils. "Apupa" is a form of cake made by frying barley. Kichadi prepared from rice together with lentils mostly consumed by Aryans. The literature of Buddhists and Jains reveal the popularity of rice and its gruel.1

Classified of food material

Aryans broadly classified food materials on the of their nature and use such Sukadhanya(cereals); Samidhanya (pulses); Phala ;Shakna (vegetables); (fruits) Payovarga (milk products); Madhyavarga (alcoholic Mamasavarga (animal products); Gorasavarga (class of milk and milk products); Ikshuvikara Varga (class of sugarcane and its products); Kritanyavarga (manda, vilepi); Aharapoyogivarga (oil, spices, condiments) (Table 1).1

Table 1: Classified food material

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Name of the Classified food group	Included food material	Nutrients	Beneficial impacts on health			
Sukadhanya (class of corns and	Different varieties of rice. Red variety	Carbohydrate; Thiamine etc.	Barley is indicated in Diabetes; Obesity; Injuries; Hyperension; Cholesterolemia;			
cereals)	(<i>Rakta Shali</i>) is best		Slow stomach emptying.			

Simbidhanya or Shamidhanya (class of legumes and pulses)	among the rice varieties; Wheat; Barley etc. Green gram, Back gram, Horse gram, Tila etc.	Vitamin E, Copper, Black gram Contains Potassium etc.	 Pulses cures Cardiovascular disease; Obesity Horsegram is curative in urinary calculi; bowel haemorrhage Black gram reduce hypertension
Mamsavarga (Flesh food)	Beef; Fish; Chicken; Mutton, etc.	Protein, Iron, Vitamin-B12.	Beef is curative in Rhinitis; Irregular fever; Wasting of muscles.
Shakna (vegetables)	Bottle gourd, Waxgourd, Cucumber, Radish, Cabbage etc.	Green-leafy vegetables are rich in Potassium Radishes are a very good source of Vitamin C, Folate, Fibre, Riboflavin, and Potassium.	 Bottle gourd is recommended for Weight-control programs Cucumber is Diuretic Waxgourd helps in the elimination of urine and faeces; management of Benign Prostatic Hyperplasia(BPH) Snakegourd is beneficial to Ulcers, Radishes are effective in Colorectal cancer; lower Cholesterol; manage Diabetes; regulate Blood pressure Hummingbird flower is especially beneficial in Night blindness; Bone strengthening.
Phala (Fruits)	Pomegranates Amalaki, Guava, Apple, Dates, Coconut, Mango, Almond etc.	Dates are rich sources of Fibre, Copper and Potassium. Almonds are a very good sources of Vitamin E, Manganese	 Pomegranates might help prevent Heart disease; treat Jaundice; Diarrhoea Amlaki is beneficial to Eye sight; Diabetes Grapes has been found to play a protective role against Colon cancer; Prostate cancer; Coronary heart disease(CHD) degenerative nerve disease Alzheimer's disease Mango has been found to play a protective role against Asthma; Prostate cancer Dates are proves curative in cases of Haemoptysis.
Jalavarga	Both cold water and hot water.	Cold water is beneficial in hot seasons and in burning sensation of the body.	Warm water is Appetizing; Diuretic and Febrifuge. The use of water boiled and subsequently cooled down is recommended in Dysentery, Burning of the skin, Haemoptysis
Gorasavarga	Milk of Buffalo, Camel, Mare, Ass, Elephant, Sheep and Human, Curd, Buttermilk and Ghee etc.	Calcium, Protein, Fat, Vitamin.A.	 The milk of buffalo is useful in persons suffering from Insomnia. Goats milk is especially useful in persons suffering from Phthisis. Human milk is useful in Eye diseases and Raktapitta. Curd (Dadhi) is Appetizer, Stimulant, Aphrodisiac, and is useful in Nasal catarrh, Diarrhoea. Ghritam (clarified butter) promotes Memory, Intellect and specially

				curative in Eye diseases like Cataract
Madyavarga	84 types of Alcoholic products	Starch, Carbohydrate, Fluoride	1.	It promotes Confidence, Energy, Intelligence, Strength and it works as Elixir. Antioxidants in red wine called Polyphenols may help prevent damage to blood vessels, reduces Low-Density Lipoprotein (LDL), Cholesterol and prevents blood clots and is a good Appetizer.
Ikshuvarga	Sugarcane products Asphanita (sugar cane juice), Guda, Matsyandika (refined sugar) Khanda(superior variety of sugar) and Sarkara (crystallized sugar)	The most common nutrients found in Honey are Vitamin B6, Niacin, Thiamine, Pantothenic acid, and Riboflavin etc.	 1. 2. 3. 4. 	Sugarcane is Spermatopoetic and Diuretic. Guda acts as Demulcent and purifier of blood and urine. Sugar is Aphrodisiac and Unctuous; useful in thirst and burning sensation. Honey acts as a purifying and healing agent in respect of Ulcers and Eyes and is Aphrodisiac.
Kritanna varga (class of cooked food)	Manda (gruel water), Peya (thin gruel), Vilepi, Yavagu (thick gruel) and Odana (boiled rice)	Carbohydrates Starch etc.	 2. 3. 4. 	Manda stimulates the power of digestion and facilitates the downward movement of flatus. Peya alleviates hunger, thirst, depression, weakness, Abdominal diseases and Fever. Vilepi is Refreshing, Bowel binding, light and Cardio tonic. The Soup (Yusa) of Masura or Mudga or Kulatha is specially recommended in Nervous diseases; Asthma, Cough, Piles etc.
Aharaupayogivarga	This class contains different types of Oils, daily useful dietary supplements like <i>Pippali</i> , <i>Shunthi</i> etc, different types of Salts, etc.	Fat, cholesterol, iron etc	1. 2. 3. 4. 5. 6. 7.	Mustard oil cures Itching and Urticaria Ginger is used for treating Indigestion, Flatulence, Colic, Vomit, Stomach spasm, Cold, Cough and Asthma. Hingu (Asafoetida) relieves Colic pain, Indigestion and suppression of stool Cumin promotes Digestion and relieves Diarrhoea. Black pepper is a Stimulant, Decongestant, Expectorant and Digests fat. Garlic cures Infections, useful in Skin Diseases. Turmeric is a powerful Anti-inflammatory and Antiseptic, useful for Bronchial asthma, Chronic cough. It has an Anticancer properties, keeping the blood thin. Rock salt is promoter of Digestion, Aphrodisiac, conducive for Eyesight ^{1,6}

Seasonal dietetics: Seasonal climate and atmosphere have definite effect upon human digestion. Hence, ayurveda has advised some dietetic variations according to season (Table 2).³

Table 2: Seasonal Dietetics

Season	Reccommended food type	Prescribed food	Rejected food
	Easy for Digestion, bitter,	Wheat, Barley, Honey and	Salty, sour and sweet,
Spring	hot and astringent, light	Water, Fruits like Mango,	heavy unctuous diets and
	diet are advised	Jackfruit and Flesh of Forest	day sleep should be
		Animals are advised	avoided
	Cold, liquid, sweet and oily	Rice, Milk, Sugar, Ghee,	Hot, salty, sour, spicy,
Summer	diet is recommended.	Grapes, Coconut water, Meat	pungent diet should be
		of forest animal is strongly	avoided.
		prescribed.	
	Sweet, sour, salty food and	Old barley, Wheat, Red rice	
Rainy season	beverages are preserved.	along with Meat of arid	
	The food must be hot, dry,	animals and Vegetable soup	
	fatty and easily digestible.	and Mutton soups are advised	
	Fatty, sweet, sour and salty	Milk, Sugar cane, Rice, Oils	
Winter	food.	and Fats are advised	
	Bitter, sweet, pungent	Rice, Green gram, Sugar,	
Autumn	dominant, light, and cold	Amla, Snake gourd, Honey,	
	food and beverage.	Meat of Arid animal	

Incompatible diet (viruddha ahara) and toxicology:

The food with incompatible or contradictory qualities has poisonous effect on the body which aggravates various disorders and cause different allergic and hypersensitive reactions like: Kandu (itching);Kushta (skin disorders); Kotha (allergic skin lesions); Pidaka (boils); Charmadala (callosity); can be comparable to photoallergic and phototoxic reactions caused by industrial hydrocarbons, tars etc. which emits considerable UV radiation of different wave lengths. Charaka has highlighted about incompatible diet initiates various diseases viz: Gulma (Lump), Fever, Allergic dermatitis, Eczema, Abscess and other Skin diseases. It also pull down strength, vigour, memory, immunity etc. which intern leading to, the diseases like amavata (rheumatoid arthritis); madhumeha (diabetes); sthoulya (obesity): arbuda (cancer): vakrit vriddhi (liver diseases); nidranasha (insomnia); chittodvega (anxiety neurosis) and tamaka swasa (bronchial asthma) are highly prevalent and are labeled as lifestyle disorders. Charaka mentions that the intake of incompatable diet is liable to the causation of sterility; blindness; visarpa (herpes); udara (ascites); insanity; fistula in ano; coma or fainting; intoxication; abdominal distention; stiffness in neck; varieties of anaemia; indigestions; various skin disorders; diseases of intestines; gastritis; fever; rhinitis; infertility.¹

The dietary incompatibility is of eighteen types, which are as follows:

- 1. *Desha viruddha* (contrary to climate)
- 2. Kala viruddha (contrary to season)
- 3. Agni viruddha (contrary to digestive power)
- 4. Matra viruddha (contrary to measure)

- 5. Satmya viruddha (contrary to adaptability)
- 6. *Dosh viruddha* (contrary to body humors)
- 7. Sanskara viruddha (contrary to processing)
- 8. *Virya viruddha* (contrary to potency)
- 9. *Koshtha viruddha* (contrary to bowel habits)
- 10. Avastha viruddha (contrary to patient's state)
- 11. Krama viruddha (contrary to order of eating)
- 12. Parihara viruddha (contrary to restrictions)
- 13. *Upachara viruddha* (contrary to observances)
- 14. Paka viruddha (contrary to cooking)
- 15. Samyoga viruddha (contrary to combination)
- 16. *Hridaya viruddha* (contrary to palatability)
- 17. Sampata viruddha (contrary to rich quality)
- 18. Vidhi viruddha (contrary to mealtime rules)²

Few contradictory combination are:

- 1. Fish or its soup along with milk.
- 2. Equal quantity of honey with ghee.
- 3. Milk or milk products with alcoholic beverages.
- 4. Processed food or cereals with milk.
- 5. Radish consumed with milk.
- Lotus stem with honey etc.³

Forbidden food articles

There are some dietary articles which are unwholesome by nature cause illness and their excessive or regular intake is be contraindicated and prohibited. Excessive consumption of *Pippali (Piperlongum)* leads to disorder of homeostasis of physiology and over intake of Lavana (common salt) can cause premature greying of hair, falling of hair, alopecia, wrinkles of the skin and excessive intake of alkaline foods are harmful for eyes, hair and heart diminished vision, premature greying of hair, falling of hair.²

Prophylactic and therapeutic aspects of ayurvedic dietetics

Biological activity and Nutritional effect of different tastes of food: The food comprises of six basic tastes viz. *madhura* (sweet), *amla* (sour), *lavana* (salt), katu (pungent), *tikta* (bitter), *kashaya* (astringent) and each

taste have specific impact on bio-humours and tissue function. Ayurvedic advocacy at all times emphasizes on enjoying all six tastes of food and prohibition of excessive use of single tastes leading to illness. Moreover different tastes provide specific biological activity influencing physiology and nutritional impact. (Table 3)⁵

Table 3: Biological activity and Nutritional effect of different tastes of food

S No.	Taste	Metabolic Impact	
1.	Sweet (Madhura)	Tissue nourishing; Bulk promoting hair tonic ; Injury healing;	
		Galactogogue	
2.	Sour (Amla)	Nourishing; Bulk promoting; Cardio-protective; increases taste and power	
		of digestion.	
3.	Astringent (Kashay)	Injury relieving; clarifies blood.	
4	Salty taste (Lavana)	Pulls down Inactivity; Inertness; accelerates digestion; leads to	
		Unctuousness and causes perspiration; accelerates taste.	
5.	Bitter taste (Tikta)	It vitiates Loss of appetite, Worms, Thirst, Toxicity, Skin ailments,	
		Fainting, Fever, Over secretion of mucous, Burning sensation; It regulates	
		Intellect; clarifies Breast milk; and Throat	
6.	Acrid taste (katu)	Vitiates Throat ailments; Skin diseases; Oedema; Increases digestibility;	
		Improves appetite (3)	

Prophylactic Nutrition Intervention in Paediatrics

Ayurveda emphasized initial importance on wholesome diet (prophylactic and promotive nutrition) while advocacy of specific diet in disease condition (clinical nutrition) is always done, which is the characteristic of holistic Ayurvedic approach. (Table 4)⁶

Table 4: Prophylactic Nutrition Intervention in Pediatrics

S. No.	Age	Nutritional Interventions	Rationale
1.	Immediately	Jata karma – Chanting the mixture	Immune mechanism
	after birth	Honey and Ghee	
2.	Immediately	Swarna prashana – Oral intake of fine	Immunity, Intelligence
	after birth	paste of Gold	
3.	Immediately	Bacopa monnieri , Acorus calamus,	Immunity, Intelligence, Energy etc.
	after birth	Convolvulus pluricaulis Sida cordifolia,	
		Saussurea lappa, Asparagus racemosus	
4.	1st day	Honey+ Butter+ Hemidesmus indicus,	Promote Higher Mental Functions and
		Cynadon dactylon /Gold	CNS
5.	2nd day	Ghee medicated with Herbs	Promote Higher Mental Functions and
			CNS
6.	3rd day	Colostrum of breast milk + Ghee +	Promote Higher Mental Functions and
		Honey	CNS
7.	1st month or	Surya Chandra Darshana :Exposure to	Vitamin - D3 or Hepatic function
	3rd month	external environment	
8.	6th month	Phalaprashana: Introduce different	Fulfilment of Nutritional demand
		Fruits	
9.	10th month	Annaprashana: Introduce variety of	Fulfilment of Nutritional demand(3)
		cereals and pulses in the diet of the child	

Disease specific diet

Ayurveda provides the *pathyavyavastha* (planning of diet- dietetics) in a very scientific and holistic way *Pathya* (or a proper diet advocacy) is defined as the "diet plan". The recipes for clinical nutrition portrays several form of diets with clinical properties. These approaches certainly play a vital role in prevention and management of diseases. (Table-5)⁸

Table 5: Disease specific diet

Diseases	Nutritional Causes	Management
Diabetes	Excessive intake of Milk & Milk products,	Barley, Old wheat, Horse gram, Green
(Madhumeha)	Fresh grains, Food articles prepared from Jaggery or Sugar or Sugar cane	gram, Red gram, Sesame seeds, Peas, Snake gourd, Bitter gourd, Garlic, Ginger, Piper longum, unripe Banana, Takra (butter milk), Kharjur (dates), Water melon, Lotus root, Drum stick
Skin diseases (Kushta)	Consumption of uncooked food, over eating, over intake of fresh grains, sour and salty substances, Black gram, Raddish, Sesame seeds, Milk and Milk products, Jaggery.	Old barley, Wheat, Green gram, Red gram, Old ghee, Honey, Pointed gourd, Garlic, Oil of Sesame, Mustard etc.
Abdominal disorders (<i>Udara roga</i>)	Use of adulterated and uncooked food, stale food items, leafy vegetables, incompatible food, and foods causing Indigestion & Constipation.	Old horse gram, Green gram, Barley, Honey, Butter Milk, Garlic, Ginger, Castor oil, Pointed gourd (parval), Bitter gourd, Drum stick, Cow's & goat's milk
Haemorrhoids (Arsha)	Intake of dry food articles causing Constipation; Fish, paste of Sesame seeds, Black gram, ripe Mango, Soft gourd.	Red variety of rice, Butter milk, Butter, Goose berry, Black pepper, Pointed gourd, Cow's milk, Goat's milk, Rice gruel, Garlic, Ginger, Haritaki, Mustard oil etc
Diseases related to nervous system (Vata vyadhi)	Dry, cold, scanty food, fasting or starvation, over intake of Honey, Peas, Green gram	Food containing sufficient fat content, easily digestible, warm food, Wheat, Horse gram, Black gram, Brinjal, milk.
Fistula – in-ano (Bhagandara)	Consumption of dry food articles leading to Constipation.	Red variety of rice, Green gram, Pointed gourd, Drum stick, Radish, Sesame and Mustard oil, Ghee, honey etc
Urinary calculus (Asmari)	Consumption of sour and dry food articles aggravate Constipation, Incompatible food.	Barley, Horse gram, Old rice, Madya, Ginger etc
Oedema (Sopha)	Intake of excessive sour, hot or Alkaline food, foods hard to digest, Curd, Uncooked food, Leafy vegetables, Stale and Adulterated (poisoned) food, Alcohol.	Barley, Horse gram, Green gram, Fish, Old ghee, Butter milk, Bitter gourd, Drum stick, Mango, Carrot, Pointed gourd, Brinjal, Radish, Turmeric, Milk.

Prevention of Sequential loss of several biological qualities in aging: Suggested Ayurvedic Nutritional approach: Ayurvedic nutritional approach and various interventions for prevention of sequential loss of some biological qualities in aging are described in Table 6.

Table 6: Prevention of Sequential loss of several biological qualities in aging: Suggested Ayurvedic

Nutritional approach

Decades	Age	Desired effect	Suggested interventions for prevention of sequential loss of several biological qualities
First	0-10	Balya (Boyishness)	Vaca (Acorus calamus Linn.) Kasmari (Gmelina arborea Linn.)
Second	11-20	Vriddhi (Growth)	Asvagandha (<i>Withania somnifera</i>) Bala (<i>Sida cordifolia</i> Linn.)
Third	21-30	Chhavi (Beauty)	Amalaki (Emblica officinalis Gaertn.)
Fourth	31-40	Medha (Intellect)	Sankhapushpi(<i>Convolvulus pluricaulis</i>) Jyotismati (<i>Celastrus panniculatus</i>)
Fifth	41-50	Twacha (Skin health)	Bhringaraja (Eclipta alba Hassk)
Sixth	51-60	Dristi (Visual acuity)	Caksusya (Cassia absus Linn.)

			Triphala ,Ghee)
Seventh	61-70	Sukra (Sexual Ability)	Atmagupta (Mucuna prurita Hook)
			Asvagandha (Withania somnifera)
Eighth	71-80	Vikram (Physical	Understandable rasayana interventions to
		endurance)	improve physical and psychological quality of
			life (QOL)
Ninth	81-90	Buddhi (Mental health and	Knowable rasayana interventions to improve
		wisdom	physical and psychological quality of life
			(QOL)
Tenth	91-100	Karmendriya	
		(Motor Activity)	

Modernity of food: Today's diet is drastically different from that of just 30 or 40 years ago. Then most food was fresh, grown locally, recent, sound and cooked at home. Now, almost everything we purchase has been processed. It comes with additives, chemicals, colourings, sugar, trans fats and salt or sodium, white flour.

As the speed of our society has quickened, more and more people are eating on the go. They are picking up fried, fast food and eating it in the car, they are grabbing pre-packaged snacks and drinks and they are eating foods that are not made fresh or naturally. Following the evolution of modern human, another vast change in diet occurred due to manufacturing technologies developed after the industrial revolution.

Relates to junk food

Modern diet relates to "junk food" that generally means an empty calorie food. An empty calorie food is a high calorie or calorie-rich food which is deficient in micronutrients such as carbohydrates, proteins, vitamins, minerals, or amino acids and fibre, but has high energy (calories). These foods are made of high levels of refined sugar, white flour, trans fat, poly unsaturated fat, salt and various food additives such as monosodium glutamate, tartrazine, at the same time it is lacking in proteins, vitamins, essential minerals, fibres.

The numerous food systems and diets that are part of these diverse ways of life affecting people's levels of physical activity, their body composition & physique, their life expectancy, and patterns of diseases.⁷ A case study on consumption of fast foods in Ghana reported a direct correlation between intake of junk food and obesity rates.

The report suggests that obesity resulted in related complex health concer ns such upsurge of heart attack rates. A Scripes Research Institute study in 2008 confirmed that junk food consumption alters brain activity in a manner similar to addictive drugs like cochaine and heroin.

Rapid changes in diet and lifestyle led to a vast emerging shift towards non-communicable diseases (NCDs) such as lifestyle related disorders (diabetes, obesity, arthritis, mental illness, cardiac diseases, cancer etc.) and Ayurvedic principles certainly play a vital role in their prevention and management.³

Conclusion

The evolutionary history of hominins has been characterized by major dietary changes, which include the introduction of meat eating, cooking, and the changes associated with plant and animal domestication. Decades of anthropological research have been devoted to elucidating this dietary history, in part because these shifts were likely associated with significant anatomical and cultural changes (e.g., the increase in relative brain size and the advent of modern civilization via agriculture). However, reconstruction is also vital for understanding the evolutionary context of our modern diets and the diseases often associated with them. Rapid changes in diet and lifestyle led to a major emerging shift towards non-communicable diseases which are responsible for recent useless food. So, to survive from such vicious condition, we have to take our coumtry's traditional ayurvedic system which deals with health-promoting regime (pathya vyavastha); specific diet and lifestyle guidelines are always recommended along with the drugs and therapies. Therefore, significant emphasis on diet planning based on Ayurveda principles would certainly help in health promotion, prevention of diseases and their management.

Several research papers have been published substantiating the potential of Ayurvedic interventions in malnutrition and developing physical endurance and health promotion in children and adults. Ayurveda has considered human dietetics and nutrion not only from the view of physical hygiene but also mental and and social hygiene by deeply thinking of surrounding environmental and social conditions and hence, it is certainly applicable to the modern world. Thus, Ayurveda proposes an entirely different approach to food, diet, and nutrition that is in strong contrast to the conventional Western and modern approach.

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