

The Essence of Indian Indigenous Knowledge in the perspective of Ayurveda, Nutrition, and Yoga

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Article History

Received: 23/08/2020

Revised: 29/08/2020

Accepted: 15/09/2020

<http://doi.org/10.5281/zenodo.4308433>



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Introduction

1. Belief and Practice

Traditional knowledge signifies the specific cultures of one community. India has come out with a significant role of indigenous, i.e., traditional knowledge in the forms of various cultures, languages, wearing, foods. India is always one of the best places of research of indigenous cultures to gain and share significant knowledge of arts, music, literature, sculpturing, drama, novels in addition to natural healing methods. The practices of traditional cultures among the

Abstract

Indian traditional knowledge systems evolved over centuries through the cultures of various communities. They are also called indigenous systems made upon by versatile people by their diversified habits on foods, dresses, languages, living styles, and therapeutic methods in health care. India's traditional cultures have already been validated and well-accepted by various science communities and research organizations worldwide. The systems and their protocols are gradually becoming more popular because of distinguished ancient and current knowledge, innovations, benefits, and traditional beliefs. More importantly, India is the motherland of conventional therapies such as Ayurveda, Naturopathy, Yoga, and Nutrition. These are the alternatives therapeutic approaches by the India and Indian therapists who are growing with not only natural treatment protocols but also some significant research. India is one of the best countries to produce a variety of vegetables and fruits seasonally. They are the natural and reliable sources of multivitamins, minerals in addition to other nutrients that are helpful to protect and boost the immune system. Hence, India's indigenous knowledge and culture in perspective of Ayurveda, Nutrition, and Yoga have been playing significant roles in various healing processes and human values.

Keywords: Indian traditions, Ayurveda, Nutrition, Yoga, Indigenous Knowledge, traditional healing

local communities represent the cumulative indigenous knowledge and beliefs. These have been developing by so many generations and consistent applications through the people's lifestyles, food habits, holistic approaches, utilization of natural resources, and adjustment of the environment (1,2).

2. Spiritual and Religious heritage

Traditional knowledge is also based on a spiritual perspective since the Indus Valley civilization. Rigveda, the oldest surviving text of Hinduism, was presented during



1700–1100 BCE as the Vedic period, and similarly, Ramayana and Mahabharata were written within 500–100 BCE (3,4). Traditional knowledge has been standing on the environment like cosmological knowledge systems, proverbs, and taboos that preserve ethnicity to protect biodiversity (5,6). In India, 70 million people are in 228 ethnic groups. The compiling of 575 tribal communities originated from six racial stocks, such as Proto-Australoid, Mongoloid, Negroid, West Breachy Mediterranean, and Nordic exists in a different part of the country (7,8).

3. Ayurveda

Ayurveda is an Indian-origin traditional medicinal system, which is one of the best choices as natural treatments with no such contraindications relatively quite affordable to all. For 3000 years, this system of medicine has been going on in India and other countries very successfully. As of date, Ayurveda is not only popular in India or Asian countries but all across the world due to its natural approach and applications to all kinds of people. The 'Ayurveda' comes from Sanskrit words Ayur as *life* and Veda as *science* or *knowledge* (9). Hence Ayurveda is another form of *understanding of life* believed by Ayurvedic doctors (Ayurvedachariyara) and other researchers.

3.1 Use of Ayurvedic Medicines :

Aahar (diet), anala (digestion; fire), avastha (stage of the illness), bala (physical strength), dosha, dushya, kala (time), prakriti (general constitution), satmya (favourable factors), satva (mental strength), , vaya (age) (10).

3.2. Some of the therapeutic measures of Ayurveda : (10)

Ahara (food)

Acharya (behavior; conduct)

Brahmana (body weight promoting; bulk-promotion)

Langhana (production of light or glow in the body)

Rukshna (roughening)

Rasayana (promotive therapy)

Svedana (inducing perspiration)

Stambhana (holding back; refrigeration and checking)

Snehana (anointing someone with oil or ointment)

Samsodhana (proper purification by the elimination of impurities)

Vajikarana (aphrodisiac)

3.3. Natural Supplements and Products

Basic Poultices, Decoctions, Skin Cream, Boluses & Suppositories, Cough Syrups, Cold Oil Infusions, Herbal Infusions, Hot Oil Infusions, Herb Macerations, Herbal Pills, Herbal Teas, various Ointments, Powdered Herbs, Salves, Steamed Poultices, Tinctures, Tonic Wines (11,12).

4. Foods and Nutrition

India is such a distinguished country where many diversities exist, including foods and their choice as per community. In India, our ancestors used to consume different foods according to trends and changes in time. They also considered that consuming healthy and nutritious foods daily not only provides taste or flavor but better health and its protection. As per existing literature, Indian civilizations followed and still have been following the quality foods as best natural medicines since Indus Valley Civilization and the Vedic age. Indian old literature such as Ramayana, Mahabharata, Manusmriti, and Bhagavadgita has focussed on the uses and applications of foods and nutrition. Therefore, every community lives in India has had an evident and

distinguished food belief system. Some studies showed that amongst all beliefs, Aryan beliefs and practices drastically progressed in terms of various indigenous systems. However, since that time, foods are always believed as a source of physical cum mental power, self-satisfaction, and hence considered the best gift from God (11,12,13).

4.1 In food science, there are six primary nutrients, which are: (14,15,16)

Carbohydrate: Needed for the production of primary energy to perform all essential activities. These are available in staple meals in our daily lunch and dinner usually. Example: rice, wheat, ragi, millet.

Protein: Mandatorily to add in staple foods that are required for bodybuilding and immunity protection. Example: fish, eggs, chicken and milk, pulses, beans.

Fat: This is also important to supply a high amount of calories because, without sufficient energy, a high level of activities or sports cannot be performed - for example, cooking oil, butter, ghee.

Minerals: These are important for immunity, protection to various systems in a body.

- i) Macro group: Sodium, Potassium, Chloride, Calcium, Phosphorus, Magnesium, Sulphur
- ii) Micro group: Chromium, Zinc, Cobalt, Fluorine, Iodine, Manganese, Molybdenum, Selenium.

Vitamins: They play significant protective roles and make the body disease-free and healthy.

- i) Fat-soluble: A, D, E, K
- ii) Water-soluble: B-complex -Thiamin (B1), Riboflavin (B2), Niacin (B3), Choline (B4), Pantothenic acid (B5), Pyridoxin (B6), Biotin (B7), Folate (B9), and Cobalamin (B12).

Water: Normal drinking water has zero calories, although water is our life. A person needs 10-12 glasses (2.8 to 3.8 liter) of water on an average per day but variable according to some factors. Water provides hydration, proper blood circulation, etc.

Table-1. Nutritional benefits of seasonal and commonly available vegetables and fruits in India

Name of Vegetable	Scientific Name	Chemical compound	Calories (kcal)/ 100gm	Nutritional and other health benefits
Broccoli	<i>Brassica oleracea</i>	Glucobrassicum, Carotenoids such as Zeaxanthin, Betacarotene, Kaempferol	34	1) Excellent source of vitamin-C. 2) Antioxidant properties help to reduce inflammation. 3) Reduce the cholesterol level. 4) Reduce oxidative stress as well as cellular damage in the eye. 5) Presence of dietary fiber (17).
Potato	<i>Solanum tuberosum</i>	Phenolic acid, Flavan-3ols, Flavonols, Anthocyanin, Tocopherol Carotenoids, Phytic acid, Folic Acid	77	1) High level of carbohydrate. 2) High calcium and other minerals. 3) High energy and satiety (17).
Sweet potato	<i>Ipomoea batatas</i>	Alkaloids, Saponin, Tannins, Steroids, Anthocyanins, Flavonoids Anthraquinones	87	1) Good source of fiber, vitamin, and minerals. 2) Rich source of antioxidant hence prevents damage caused by free radicals in the body, which leads to cancer. 3) Rich source of soluble fiber helps to absorb

				water and soften the stool (17).
Bottle gourd	<u><i>Lagenaria cineraria</i></u>	Cucurbitaceae	14	1) According to ayurvedic bottle- gourd is good for digestion. 2) Presence of Vit-B increases the metabolic rate of the body, better digestion of fat. 3) It helps in urological problems, reduces burning sensation during acidic urine (17,18).
Lady Finger	<u><i>Abelmoschus esculentus</i></u>	Cellulose, hemicellulose, pectin, lignin	33	1) It contains a sufficient amount of dietary fiber, which regulates the absorption rate of sugar into the digestive tract. 2) It has anti-diabetic property. 3) Pectin soluble fiber present in the body help in lowering the cholesterol in the blood Immunization, (18).
Brinjal	<u><i>Solanum melongena</i></u>	Carbohydrate, Phenolic glycosides include anthraquinone, glycosides, tannins, flavonoids, terpenoids, steroids, saponins	25	1) It helps to maintain figure as it contains a very decent amount of calorie and 100gm have only 2gm fat. 2) It helps to treat diabetes as it contains polyphenol, which regulates blood sugar, and roots help in treating asthma (19,20).
Pumpkin	<u><i>Cucurbita</i></u>	Phenol	26	1) It is rich in fiber hence gives satiety and keep weight in control. 2) It contains Beta-carotene, which converts vitamin-A in the body and helps to maintain good eyesight. Along with this, it has lutein (21,22).
Tomato	<u><i>Lycopersicon esculentum</i></u>	Phytoene, Phytofluene, Betacarotene, Flavonoids, carotenoids, Lycopene, Quercetin, Polyphenol, Kaempferol	22	1) It contains Lycopene, which reduces the risk of prostate cancer. 2) It contains Potassium, which helps in treating people having a sodium-potassium deficiency. 3) Rich source of vitamin-c, Tomato can fulfill 40% of daily vitamin-c deficit (23).
Category: Fruits				
Green Grapes	<u><i>Vitis vinifera</i></u>	Phenolic acid, Flavonols, Flavon-3-ols, myricetin, Peonidin, Flavonoids, resveratrol, quercetin, tannins, anthocyanins, kaempferol, cyaniding, ellagic acid	67	1) It contains a sufficient amount of vitamin-K, which is helpful in bone formation, 10% of copper, vitamin-C, which helps in immunization as well as DNA repairing, burn fat during exercise, preparing collagen, and serotonin, which helps in sound sleep (27). 2) It has an anti-microbial property, which is essential for hydration (24).
Water Melon	<u><i>Citrullus lanatus</i></u>	Lycopene, Vitamin-c, Beta-carotene, Polyphenolic	30	1) It contains 95% of water; hence it provides refreshment. 2) Contain a high amount of antioxidants & amino acid, building blocks of protein; therefore, in the body build up (25). 3) It contains Lycopene, which helps in healthy bone formation, prevent heart disease, prostate cancer. 4) It contains Beta-carotene (25,27).
Musk melon	<u><i>Cucumis Melo</i></u>	Hexadecanoic acid, Heptadecanoic acid, oleic acid, Pentadecanoic acid	68	1) It is a rich source of Potassium (100gm contain 531.96mg) hence help in regulating blood pressure. 2) It has vitamin-A which is good for eyesight, along with its boost up immunity 3) Fat content is .3 in 100gm that is quite

				negligible, hence very good for weight loss (25,26).
Litchi	<i>Litchi chinensis</i>	Epicatechin, procyanidin, Cyanidinglycoside, Malvidin glycoside, and saponins; butylated hydroxytoluene	66	Lichee fruit contains 66 calories per 100 gm. It has no saturated fats or cholesterol. It provides adequate amounts of dietary fiber, vitamins, and antioxidants (26).
Banana	<i>Musa</i>	Alkaloids, Flavonoids, Tannins, Phenolics compounds	89	1) It contains a 3gram of fiber that is 10% daily need to keep bowel working. It checks cholesterol levels. 2) It contains a high amount of Potassium (9% of RDI); hence it regulates blood pressure; it is also beneficial for a healthy kidney. 3) It contains antioxidants (26,27).
Mango	<i>Mangifera indica</i>	Mangiferin, Gallic acid, Gallotannins, Quercetin, Isoquercetin, ellagic acid, Beta-glucogallin	150	1) It contains Zeaxanthin, which plays a significant role in the prevention of eye-related problems. 2) Japanese scientist found that carotenoids, which are present in Mango, help in reducing the chance of Colon Cancer, 3) Presence of Potassium, the fiber in Mango, helps keep arteries regular and prevent Heart disease (27).
Beal	<i>Aegle maoels</i>	Flavonoids, Phenolic	137	1) It contains fiber (laxative); hence it helps in treating the constipation problem. 2) It has stool binding property hence helpful in treating Diarrhoea, Dysentery. 3) It contain nutrients like Riboflavin, vitamin-C, B1, B2, Protein, Beta-carotene, Thiamine, Niacin along with potassium. 4) Body cooling effect (25,27).
Dab (Tender coconut)	<i>Cocos nucifera L.</i>	Phenol, tannins, leucoanthocyanidin, Flavonoids, Triterpenes steroids, alkaloids	19	1) The calorie is very low. 2) Fat and cholesterol content is negligible. 3) Potassium (61mg) content is high; hence its use in treating patients having Sodium Potassium deficiency (27).

Please note the health benefits mentioned herein are generalized but not applicable to all similarly.

5. Yoga and Pranayam

Yoga is state of the art for excellent living. The traditional system that directs people towards healthy lifestyles by a consistent practice every day. It helps to maintain good behavior, character, attitude, and

personality. Yoga helps and rejuvenates not only physical well-being but also mental and spiritual. Here are some useful poses to practice yoga to get the best health and mind-body relationship (28,29,30).



Figure. 1. Various useful yoga poses for daily practice quickly (28,31) :

6. Intellectual property rights

People of India are following the traditions as per generations going on. However, to maintain and protect the traditions and indigenous cultures, there are intellectual property rights as per government rules. The human rights of indigenous people and local communities collectively or autonomously recognized by the government are international laws. International Labour Organization (ILO) Convention 169 (1989) and the Declaration on the Rights of Indigenous Peoples (2007) have already been the imposed laws and regulations applicable to all countries, including India. The Rio Declaration (1992), endorsed by the country presidents and ministers of most of the states, are also implemented. The significant interests were to pass the laws internationally just to protect and recognize

the indigenous cultures and unique traditional systems in respect of distinct communities of India like other countries. (32,33).

7. Government of India Initiatives

The government of India also has taken several steps to protect not only the intellectual property rights of Indian cultures but also knowledge. Knowledge is power, but that should be accessed easily by storing and maintaining appropriately offline and online for general studies and research. The Government of India set up the Traditional Knowledge Digital Library (TKDL) as a repository of 1200 formulations of various systems of Indian medicine, such as Ayurveda, Unani, and Siddha, and fifteen hundred Yoga postures (asanas) in 2001. The knowledge cannot be confined within a particular community or country but

globally. Indian knowledge systems also available through translations into five different languages such as German, French, Spanish, Japanese, including English. There was a signed agreement with the United Kingdom Intellectual Property Office (UKIPO), European Patent Office (EPO), United States Patent and Trademark Office (USPTO) to prevent the unverified permissions of invalid patents. The grants are considered through justifications and verifications duly performed by the patent examiners at International Patent Offices. So that, access to the TKDL database for patent search and examination get possible for the right person and purpose (34-36).

Conclusions

In India, traditional knowledge always focuses on conventional healthcare systems such as Ayurveda, Homeopathy, Yoga cum Prayanam, Nutrition, Siddha, Unani, and some folk remedies. Ayurveda, foods, nutrition, and yoga cum pranayamas have had taken notable roles to continue India and its traditional systems cum indigenous cultures. India has achieved one of the leading positions in the globe by these healing systems. Ayurveda and other natural treatments have shown significant recoveries in various physical and mental disorders for long decades. Similarly, foods provide energy as well as nutrition, not only human beings but entire living beings. Food as medicine and nutrition converts ill health to the proper health of an individual, and that is because of safety, affordability, and ingenuity. A balanced diet composed of nutritious foods and simple yoga practicing at home is the best way to keep fit sustainably. So, India and Indian people are always united in diversities because of their various traditional knowledge systems and indigenous cultures.

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