

Traditional Indian practices: Time to revisit and re-adopt for a healthier lifestyle

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Abstract

The COVID-19 pandemic has affected human life significantly. In spite of significant advancement of medical technology, management is still focused on preventive strategies due to non availability of vaccine or any definitive treatment. The preventive strategies include hand hygiene, social distancing, isolation/quarantine along with the methods for boosting immunity. The ancient literature and several traditional practices of our country guide a hygienic life style and address several preventive aspects of transmission of infection across the society. Furthermore, healthy eating habits and use of various herbs and spices as regular food ingredients has been proven for boosting the immunity. In this review, we have tried to correlate the traditional practices with the available scientific evidences.

Keywords: COVID-19, food habit, hand hygiene, herbs and spices, isolation, quarantine, traditional and cultural practices

Introduction

The rapid emergence of the COVID-19 pandemic has affected and devastated every part of the world irrespective of their geographical location, economic status or advance and robust health care system. The transmission mainly occurs through droplets and direct contact with patients or contaminated surfaces. However, the role of aerosol has also been described.^[1] Asymptomatic carriers contribute almost 50-80% transmission through speech droplets or fomite.^[2] Researches across the world are working to discover better testing methods to detect the infection early and looking for preventive and curative measures to stop the infection. But until that time, we must follow steps to slow and stop the spread of the disease and provide supportive care to the COVID-19 patients. The preventive

and protective measures include frequent hand washing, social distancing, covering nose and mouth and maintaining hygiene at home and work place. Various factors have been attributed to lower spread of COVID-19 infection rate in India including early lockdown, immunization with BCG vaccine at birth^[3] etc. However, the proposed preventive and protective measures have been integral part of Indian social and cultural practices. It's time to look back at our traditional practices that have come into focus lately for being a more hygienic way of life and imbibe them in our daily routine as much as possible. It's high time to readopt them as the definition of "normal" has changed drastically in the wake of the current pandemic. In this article, we have attempted to enlist some of the established traditional and cultural practices while correlating them with current scientific evidence.

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Behavioral and Cultural Practices

Hand hygiene

Appropriate hand hygiene has been found as the single, important and most economical method of reducing hospital associated infections.^[4] Current evidence suggests that COVID-19 transmission occurs by touching the face, nose or mouth with contaminated hand. Even contaminated hands transfer the virus from one surface to another. Frequent hand hygiene has been advocated to prevent cross infections in health care facilities however this has been a key preventive measure for spread of COVID-19 in the community as well.^[5] The hand should be washed with plain (non-antimicrobial) soap, which is a detergent-based substance containing esterified fatty acids and sodium or potassium hydroxide. The cleansing activity with plain soap not only removes lipid, adherent dirt or organic substances on hand, but also breaks the lipid layer of viruses making it ineffective to infect others.^[6] The ancient Indian literature strongly encourages the hand washing practices prior to several day-to-day activities such as prior to having meal or coming back home from outside to prevent spread of infection. Even a bath is recommended after shaving, vomiting and visiting cremation ground to prevent spread of infections in the family or others. The hand cleansing in Indian cultures was adopted as per the available resources, which include rubbing of hands vigorously with ash or mud followed by rinsing with water. The effectiveness of hand cleansing using mud and ash has been found equally effective as with soap in reducing fecal coliform hand contamination.^[7]

हस्तपादे मुखे चैव पश्चाद्रो भोजनं चरेत् | (Padma Puran Shrishti 51/88)

Eat your meal after washing hand, foot and face

चिताधूमसेवने सर्वे वर्णाः स्नानम् आचरेयुः । वमने श्मश्रुकर्मणि कृते च | (Vishnu Smriti 22)

One should take a bath after visiting cremation, vomiting or even after shaving.

Social distancing

Social distancing is a strategy to keep people physically apart from each other as an attempt to reduce or avoid the spread of any infection and in present scenario COVID-19 among the public. The traditional salutation of folding one's palms together with a slight bow of the head, "Namaste", has been acknowledged as the most respectful, humble, safest and most hygienic form of greeting especially in the face of global pandemic of COVID-19. *Namaskar/Namaste* has replaced

hugs, handshakes and elbow bump globally as form of greeting which comprises of no physical contact and proximity while still maintaining the feeling of camaraderie and regard for one another. Hand shake or any other kinds of greeting with even minimal physical contact can be the source of COVID-19 transmission.

न धारयेत् परस्येवं स्नानवस्त्रं कदाचन | (Padmapuran Shrishti 51/86)

Do not use other's towel (or other clothes) during bath.

तथा न अन्यघ्नतं (वस्त्रं) धार्यम् | (Mahabharat 104/86)

One should not wear the other's clothes

Avoiding use of other's clothes is another important component of social distancing which definitely helps and is recommended in preventing the spread of COVID-19. Removing shoes, washing hands and legs thoroughly before entering houses is an important hygienic practice of Asian culture, which may be helpful in breaking the chain and prevent the spread of infection inside the households.

Isolation/quarantine

Both quarantine and isolation involve separation of individual to protect others and limit the transmission of COVID-19. This can be applied voluntarily or as per the direction of health care authorities. Isolation is basically separating people who are infected with the virus (with or without symptom) from people who are not infected. In fact during isolation the individual should refrain himself from sharing a room or washroom at home. The term quarantine is used for a situation when an individual who has been exposed to COVID-19 is kept away from others. Quarantine helps prevent spread of disease that can occur before a person knows they are sick or if they are infected with the virus without having symptoms.^[8] Quarantine has been identified as an important component of containment measures of COVID-19 outbreak.^[9] Isolation or quarantine is not a new concept in Indian cultural practices. A period of around 40 days confinement after the childbirth helps in providing social isolation to the new mother and infant to protect from infection, along with providing due rest to the mother combined with infant care.^[10] Furthermore, the psychological impact of quarantine or isolation due to change in routine activities, feeling of confinement etc. leading to frustration and boredom^[11] used to be addressed with traditional songs, celebrations and social recognition.^[10] The common practice in India during chickenpox or small pox (prior

to eradication) was to keep child in a separate room, not allowing him to play with other children, avoid visiting each other's house and refraining others to come to your house was one of the oldest example of isolation to prevent spread of infection. Though the reason for restrictions were described to please the Goddess for early recovery. Moreover, a visit to the temple after recovery can be considered as a method of announcement of recovery and completion of isolation period.^[12,13]

Aerosol generation and spread

Jain monks cover their mouth and nose with cloth or mask (Muhapatti) to avoid unwittingly killing the living organism during breathing. Vedic scholars use their hand to cover their mouth while speaking to avoid throwing the puff of air at other's face. Our elders always insisted on speaking softly. The logic behind this was that aerosol emission increases when one speaks loudly, contributing to air borne transmission of respiratory diseases.^[14] Even some phonetic characteristics of the spoken language can influence the amount of aerosol particles produced and emitted, thereby contributing to transmission of airborne pathogens.^[15] Thereby lies the importance of powerful shlokas enlisted in our scriptures. Also, this fact reiterates the virtue of thinking before one speaks. Ancient Vedic literature also advocates observing silence for some days as a part of meditation. Now we understand that silence can also stem the progression of airborne pathogens, hence proving the adage that speech is silver, silence is gold!

Other hygienic practices

The tradition of drying one's clothes and bed linen in sun is based on the principle of using solar radiation as germicide. UVC radiation of 254 nm wavelength is most effective to kill viruses. But viral nucleic acid is destroyed even by the UV A and UV B solar radiation.^[16-19]

Traditionally, the houses are built with windows and high ceiling to provide sufficient sunlight and air flow for adequate cross ventilation. These factors prevent growth of infection. Sunlight has been proven as effective bactericidal against Mycobacteria, Streptococcus pyogenes, meningococci and staphylococci. Additionally, sunlight exposure also alleviates seasonal depression which occurs due to lack of sun exposure.^[20,21]

Removing shoes, washing hands and legs thoroughly before entering houses, is an important hygienic practice of Asian culture which prevents spread of infection inside the households. It has also been recommended during this epidemic to wash clothes after visiting outside to prevent COVID-19 transmission.

अन्यदेव भवेद् वासः शयनीये नरोत्तम |

अन्यद् रथ्यासु देवानाम अर्च्यम् अन्यदेव हि | (Mahabharat 104/86)

One should use separate clothes for sleeping, going out and for worship.

Before the advent of synthetic wall paints, it was a common practice to clean one's house at least annually or semi-annually, timed according to important Indian festivals (like Holi before onset of summers and Diwali before onset of winters). The whole house would undergo spring cleaning, clearing all nooks and corners, followed by whitewashing the walls and the floor, which was an important step in not only getting rid of insects but to sanitize as well.

Other cultural practices

Yoga and Pranayama, an integral part of Indian culture, helps provide a holistic approach to health. Regular practice of Yoga, under proper guidance increases the strength, stamina, agility and flexibility of the body and its positive effects on various organ systems have been extensively studied.^[22-24] Pranayama improves the pulmonary function by increasing the vital capacity, timed vital capacity, maximum voluntary ventilation, maximum expiratory pressure and breath holding time.^[25-28]

Another important practice of gargling with warm water saline is a wonderful and scientifically proven remedy to relieve symptoms of sore throat. It is very effective in controlling spread and promoting early recovery in upper respiratory tract infection.^[29,30] Steam inhalation has long been recognized as a panacea for running nose, common cold, nasal obstruction and now has also been proven to be effective for prevention of viral illnesses. This point is especially relevant when we are searching for any means possible to prevent the spread of the novel Covid pandemic.^[31] Consumption of hot water is being touted as panacea for viral fever. Probably hot water ingestion raises body temperature, increasing body's innate immunity to fight extraneous microbial attack.^[18,19,32]

Practices that promote outdoor activities in sun like agriculture, gardening for adults, kite flying and outdoor games in children have been a popular part of our lifestyle. Sunlight exposure is a natural source of Vitamin D, which not only prevents rickets, but also plays a key role in various metabolic pathways. Exposure to solar radiation is a method to naturally synthesize Vitamin D, which plays a vital role in modulating the immune system.^[33,34] The role of Vitamin D has been described in prevention of COVID-19 infection and deficiency has been correlated with poor outcome in COVID-19 patients.^[35,36]

Food Practices

Among food practices, literature is full of studies exploring the utility of each and every herb, spice, seed etc. commonly used in Indian household for daily cooking.

Turmeric, a significant constituent of most of Indian recipes, has anti cancerous, antimicrobial and anti - inflammatory benefits. The beneficial role of turmeric in various diseases has also been proven by numerous studies.^[37] Antimicrobial activities of turmeric and its derivatives against *Escherichia coli*, *Salmonella typhi*, *Staphylococcus aureus*, *Bacillus subtilis*, *Bacillus cereus*, *Bacillus coagulans*, *Pseudomonas aeruginosa*, *Candida albicans* has been amply demonstrated.^[38]

Onion, garlic, capsicum, ginger, cloves, black plum, mangoes, peppermint, curry leaves and many more ingredients used daily possess remarkable antioxidant effect, which provides all round protection against various noxious stimuli.^[39]

Clove contains abundant antioxidants, besides having antibacterial, antifungal and antiviral actions.^[40] Large cardamom and green cardamom also contain a myriad of antioxidants, besides having anti-inflammatory, anti-microbial hepatoprotective and ulceroprotective potential.^[41-44]

Cumin seeds have been proven to have medicinal properties. It aids digestion and is rich in iron, Vitamin B and E. Moreover, the flavonoids apigenin and luteolin in cumin seeds are antioxidants. Extracts of cumin seeds also boost immunity and benefit the nervous system.^[45,46]

The leaves and seed extracts of coriander have antioxidant role while essential oil derived from coriander demonstrates insecticidal, antirheumatic, antiarthritic, antiseptic, antibacterial, and antifungal activities. It also contains abundant amount of iron, Vitamin A, Vitamin C and phosphorus which prevents macular degeneration.^[46]

Carom seeds and fennel is a source of antioxidants.^[47] Black pepper has been studied for antimicrobial, anti-inflammatory, antidepressant and gastroprotective properties besides having a role in controlling tumor progression.^[48] Cinnamom has been demonstrated to possess antiviral activity.^[49] Essential oils derived from *Cinnamomum zeylanicum*, *Daucus carota*, *Eucalyptus globulus* and *Rosmarinus officinalis* were found to be effective not only against Gram positive and Gram negative bacteria, including some antibiotic resistant strains, but also against H1N1 and HSV1 viruses. Antiviral and antibacterial activity of such naturally derived compounds can add to our armamentarium against influenza and post influenza bacterial pneumonias.^[50]

Among herbs, Tulsi (*Ocimum sanctum*), with its innumerable beneficial properties, has been rightly crowned as “The Queen of Herbs”. Tulsi has been shown to have protective effect against harmful effects of heavy metals, industrial pollutants, pesticides, drugs, radiation, physical stresses and even psychological stress. There is an endless list of benefits of tulsi, some of which are enumerated as follows: Antimicrobial (antibacterial, antiviral, antifungal, antihelminthic, antiprotozoal, antimalarial), mosquito repellent, antidiarrheal, anticoagulant, antihypertensive, antiallergic, antitussive, anti-asthmatic, antipyretic, antispasmodic, antiinflammatory, analgesic, anti-cataract, antiemetic, cardioprotective, hepatoprotective, immunomodulator, neuroprotective, antidiabetic, radioprotective, anti-stress, anti leukoderma. It is also a memory booster and enhances cognition.^[51,52]

Fasting has also been an integral part of our traditional food practices. Our traditions have been flexible enough to provide for fasting according to one’s faith and capacity, with periods of fasting ranging from once to twice a week to fasts lasting for a week or fasting on specific days every month. Now, we have studies proving the myriad of cardioprotective, neuroprotective and metabolic benefits of fasting which promote cell regeneration and prevent ageing apart from promoting weight loss, increasing insulin sensitivity.^[53,54] Obesity itself is a risk factor for type 2 diabetes mellitus and both independently contribute in development of cardiovascular diseases.^[55] Short term fasting may even enhance response to chemotherapy while increasing the resistance of normal cells to toxic effects of chemotherapy.^[56,57]

Ministry of AYUSH has also recommended the use of various herbs, spices, regular Yoga and Pranayam as preventive health measures and for boosting the immunity during this COVID-19 pandemic.^[58]

Conclusion

By enumerating some of our traditional practices with scientific proofs validating their benefits, we seem to have just scratched the tip of the iceberg of our rich culture. Now that we understand the scientific logic behind these practices, which are a legacy of our rich culture, it seems even more imperative that we inculcate them in our daily routine. These studies prove beyond doubt, that it is in our interest to adopt our traditional Indian practices as a means to achieve a healthier and more hygienic lifestyle. The way forward is by learning from the past and adapting it according to present day scenario.

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Conflicts of interest

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