

An observational study for principles & practices of water consumption in Ayurveda with reference to the Prakriti - A Protocol

1] Madhura V. Fadanavis 2] Dr. Gaurav Rajendra Sawarkar, 3] Dr. Punam Sawarkar

1] Intern, Mahatma Gandhi Ayurved College Hospital, and Research Centre, Salod, Wardha, Department of Rachana Sharir, Datta Meghe Institute of Medical Sciences (DMIMS), Maharashtra, India

2] Department of Rachana Sharir, Mahatma Gandhi Ayurved College Hospital and Research Centre, Salod, Wardha, Datta Meghe Institute of Medical Sciences (DMIMS), Maharashtra, India.

3] Department of Panchakarma, Mahatma Gandhi Ayurved College Hospital and Research Centre, Salod, Wardha, Datta Meghe Institute of Medical Sciences (DMIMS), Maharashtra, India.

ABSTRACT:

Background: Water is an important part of a human body which comprise of up to 60% water and only brain consists of 73% of the water and the lungs comprises of 83% of water and some proportion of water is also present in the bone. Well balanced input of the water (*Pana*) and food (*Aahar*) is very important. *Ayurveda* literature has mentioned various rules for proper intake of food and *Ahar* which maintains of strength and longevity of the life. *Prakriti* is the morphological, physiological, and psychological basic traits, manifested in the intrauterine life and is said to be unchangeable throughout the life. Water is an important source of the trace elements. Water requirement is found to be increased in children, pregnant, old people. Water is vital for humankind. Ayurveda treasured secret for maintaining health lies in balancing of the dosha. There are different types of processing of drinking water in natural way. *Ayurveda* has mentioned benefit of drinking *Ushnodaka* in the *Samhita*. Drinking water according to *Prakriti* is also mentioned in *Ayurveda*. There are in numerous benefits of drinking water in Ayurveda. Drinking water quantity varies from one person to another person. Ayurveda also mentioned about benefits of drinking hot water. Adequate water intake ensures good health of a person. As food habit plays an important role in lifestyle of a person in the same way, drinking water habit is also important for good health. **Objectives:** To interpret the domestic reason for lifestyle disorders related to faulty habits of water consumption, to formulate the manual regarding practices of water consumption for the societal awareness. **Methodology:** Data will be collected from the common population having lifestyle disorders. **Expected Results:** The results will be concluded on the basis of observations drawn from the collected information. Result will be noted & presented in the form of tables. Statistical analysis will be done. **Conclusion:** The conclusion will be on the basis of observation and analysed data.

Keywords: Drinking water habits, Lifestyle disorders, *Prakriti*, *Ushnodaka*

Introduction:

The basic human necessities of a human being includes food, water, air and shelter. According to *Ayurveda*, water is the potion of life. Water is one of the five basic elements of *Panchamahabhuta* which is cited in number of *Ayurvedic* literature [1]. Approach to safe water drinking is crucial for health as well as for developmental issue. Water is an important part of the human body which comprise of up to 60% water and only brain consists of 73% of water and lungs comprises of 83% of water and some proportion of water is also present in the bone. Well balanced input of water and food is very important. *Ayurveda* literature has mentioned various rules for proper intake of food and *Ahar* which maintains of the strength and longevity of the life [2]. Various rules are mentioned in ayurvedic texts regarding drinking of water. Water should not be drink in very less or excess quantity as it is harmful for the health. Water should be consumed judiciously in appropriate quality then it acts like nectar or it acts as a poison [3]. Different medicated water which are used in specific diseases are also mentioned in the *Ayurvedic* text. One should drink water only when he or she gets thirsty. Drinking water before meal causes emaciation, weakness as it decreases *Agni* and drinking water after

meal causes obesity[4]. Water should be drink in between meal is healthy habit it helps for moistening of the food. Drinking water in early morning act as *Vayasthapana* in healthy person with respect to their *Prakruti* [5]. Excessive drinking water causes *Ajeerna* [6] . Water is the crucial nutrient and it is the one which maintain the fluid and electrolyte balance. Water should be consumed in adequate quantity neither in excess quantity which causes water toxicity nor in less quantity leading to dehydration. Water is present all over; it is vital for our mother the Earth and the life which lives on the earth. The attribute of live is pointer unit and a universal solvent. In the pre historic ages , water which was collected from rain was unpolluted , it was clean , uncontaminated , potable for drinking but now a days , there is increase in pollution so direct rainwater is not potable for drinking . Water intake should not be less in people who are suffering from haemorrhoids, diarrhoea, anemia , less digestive power. Cold water decreases thirst , , vomiting , dizziness , exhaustion and many more . Various methods of natural processing of drinking water are mentioned. The methods includes water should be store in mud pot which makes it more cool , which is more effective that refrigator. Kataka that is clearing nut , it should be added in water to sieve the dust particle or any waste materials from the water. Person suffering from indigestion must add cumin seed powder in the water which will decrease indigestion. The patient who is suffering from any kidney disease must add *Usheera* in the mud pot which leads to cleaning of kidney as well as it purify the blood . It is mentioned in *Madanapal Nighantu* which is *Mishrakavarga* about drinking water quantity according to specific *Prakurti*.

Rationale: The need of this review is to collect information of drinking water habits and its consumption. *Ayurveda* literature which includes *Brihatrayi* that is *Charak Samhita*, *Sushruta Samhita*, *Ashtang Sangraha*, *Ashtang Hridya*. and *Laghutrayi* that is *Madhav Nidan*, *Sharangdhar Samhita*, *Bhavprakash Nighantu*. Water is the *Jeeva* of life and so no one can survive without drinking water. In *Ayurveda* various guidelines are mentioned regarding drinking water habits which includes sources of water , quality of water intake, consumption of water with food, seasonal variation and water, various types of water, quantity of water according to prakurti , indication and contraindication of types of water, time for digestion of water, indication and contraindication of hot water and cold water , effect of drinking water in excess quantity . Water should be drink in less quantity in person suffering from *Agnimandya* , *Udarroga* , *Pandu* , *Atisara* , *Arsha* , *Gulma* , *Grahani*. Warm water should be drink in *Navajwara* , *Vataj Pratikshyaya* , *Hikka* , *Shwasa* , *Kasa* , *Thrishna*. Cold water is indicated in *Madatyaya* , *Bhrama* , *Klama* , *Chardi* , *Mutrakriccha* , *Daha*. Drinking water increases the physical activity, prevents the diseases, detoxify the body, improves complexion of skin, relieves fatigue, maintenance of body temperature, production of saliva, metabolism, transportation of nutrients. There is various misconception regarding drinking water habits, so it is very necessary to study drinking water habits according to *Ayurveda* and create awareness about it. Drinking water habit should be corrected to maintain health of healthy person.

Methods:

Source of Data: Subjects will be collected from common population having lifestyle disorders.

Type of Study: Observational study

Study design: A cross-sectional observational study using survey strategy in the form questioner based on the personal interview of the individual meeting to eligibility criteria of the study. The primary aim of the study is to determine the practices of water consumption habits responsible for lifestyle disorders with respect to *Prakruti*

Drug collection/ authentication:Not applicable

Detail of Drug Preparation:Not applicable

Sampling procedure: purposive sampling

Sample size (Including sample size calculation): 250

Grouping& Posology: NS

Data collection tools and process:

Inclusion criteria- The subject having lifestyle disorders and willing to participate in the study.

Exclusion criteria- Healthy individuals having not any disorders and not willing to participate in the study.

Assessment Criteria: Questionnaire for drinking water habits

Table No.1 Questionnaire for drinking water habits

Questions	Option
Q.1 Do you suffer from any lifestyle disorder	<ul style="list-style-type: none"> • Obesity • Hypertension • Heart diseases • Diabetes type 2 • Asthma • COPD • Osteoporosis • Alzhiemers disease • Anxiety • Dyslipeidemia • PCOD • CVD • Chronic liver diseases • Atherosclerosis • IRS • Depression • Do not any lifestyle disorder
Q.2 How many litre of water do you drink in a day ?	<ul style="list-style-type: none"> • 1-2 L • 2-3L • 3-4L • 4-5L • More than 5L
Q.3 Do you drink water as soon as you get up from bed ?	<ul style="list-style-type: none"> • Yes • No
Q.4 How much water do you drink as soon as you get up from bed ?	<ul style="list-style-type: none"> • 1/2 glass • 1 glass • 2 glass

	<ul style="list-style-type: none"> • 3 glass • More than 3 glass • Not drink water as soon as get up from bed
Q.5 Which type of water do you drink when you get up from bed ?	<ul style="list-style-type: none"> • Yes , hot water • Yes, lukewarm water • Yes , cold water • Yes , normal water • Not drink water after getting up from bed
Q.6 Do you drink water before meal and if yes which type of water ?	<ul style="list-style-type: none"> • Yes , cold water • Yes , normal water • Yes, lukewarm water • Not drink water before meal
Q.7 How much time before meal do you drink water ?	<ul style="list-style-type: none"> • Just before meal • Before 10 min • Before 15 min • Before 30 min • Not drink water before meal
Q.8 How much water do you drink before meal ?	<ul style="list-style-type: none"> • 1/2 glass • 1 glass • 2 glass • 3 glass • More than 3 glass • Not drink water before meal
Q.9 Do you drink water after meal and if yes which type of water ?	<ul style="list-style-type: none"> • Yes , cold water • Yes , normal water • Yes, lukewarm water • Not drink water after meal
Q.10 How much time after meal do you drink water ?	<ul style="list-style-type: none"> • Just after meal • after 10 min • after 20 min • after 30 min • after 45 min • after 1 hour • after 1 and half hour • Not drink water after meal
Q.11 How much water do you drink after meal ?	<ul style="list-style-type: none"> • 1/2 glass • 1 glass • 2 glass • 3 glass • More than 3 glass • Not drink water after meal

Q.12 Do you drink water in between meal and if yes which type of water ?	<ul style="list-style-type: none"> • Yes , cold water • Yes , normal water • Yes, lukewarm water • Not drink water in between meal
Q.13 How much water do you drink in between meal ?	<ul style="list-style-type: none"> • 1/2 glass • 1 glass • 2 glass • 3 glass • More than 3 glass • Not drink water in between meal
Q.14 Do you drink water at bed ?	<ul style="list-style-type: none"> • Yes • No
Q.15 How much time before do you drink water before going to bed ?	<ul style="list-style-type: none"> • Just before • before 10 min • before 20 min • before 30 min • Not drink water before going to bed
Q.16 How much water do you drink at bed time ?	<ul style="list-style-type: none"> • 1/2 glass • 1 glass • 2 glass • 3 glass • More than 3 glass • Not drink water at bed time
Q.17 How many times do you get thirsty	<ul style="list-style-type: none"> • 3-5 times • 5-8 times • 8-10 times • More than 10 times
Q.18 Do you drink water in standing position ?	<ul style="list-style-type: none"> • Yes • No
Q.19 Do you drink water in sitting position ?	<ul style="list-style-type: none"> • Yes • No
Q.20 While drinking water do you hold water in mouth or directly swallow it immediately ?	<ul style="list-style-type: none"> • hold water in mouth • directly swallow it immediately
Q.21 Usually which type of water do you drink ?	<ul style="list-style-type: none"> • freez water/ chilld water • clay pot water • normal water • warm water
Q.22 Which type of water do you drink in summer season ?	<ul style="list-style-type: none"> • freez water/ chilld water • clay pot water • normal water • warm water

Question	Option
Q.1 Body frame	<ul style="list-style-type: none"> • lean long • medium • large , plump, fleshy , fatty
Q.2 Body mass index	<ul style="list-style-type: none"> • <19 • 19-25 • >25
Q.3 Speech	<ul style="list-style-type: none"> • Diffuse words, easily deviates from topic • Clear , impressive speaker • Clear , less talkative likes to be reserved
Q.4 Eye color	<ul style="list-style-type: none"> • Blackish • Reddish, brown • Milky white ,edges reddish
Q.5 lip color	<ul style="list-style-type: none"> • Blackish • Reddish • Pinkish
Q.6 Nail character	<ul style="list-style-type: none"> • Small, cracking , breaking , rough , easily break • Small , smooth, flat • Big , smooth , glossy
Q.7 Nail color	<ul style="list-style-type: none"> • Blackish • Reddish • Pinkish
Q.8 Hair texture	<ul style="list-style-type: none"> • Rough and dry • Soft and delicate • Soft and shiny
Q.9 Hair Thickness	<ul style="list-style-type: none"> • Less • Medium • More
Q.10 Skin Character	<ul style="list-style-type: none"> • Cracking rough • Soft , oily with moles , pimples , freckles • Smooth and glossy
Q.11 Skin color	<ul style="list-style-type: none"> • Blackish tinge • Yellowish tinge • Fair and pinkish
Q.12 Skin temperature	<ul style="list-style-type: none"> • Cold • Warm • Mild cold
Q.13 Body odor	<ul style="list-style-type: none"> • Absent • More • mild
Q.14 Frequency of eating	<ul style="list-style-type: none"> • more • medium • less

Q.15 Quantity of meal	<ul style="list-style-type: none"> • less • medium • more
Q.16 If a meal is skipped/ timings are changed /variety of food id changed then habit of	<ul style="list-style-type: none"> • constipation • headache and vomiting • nothing special
Q.17 Thirst	<ul style="list-style-type: none"> • irregular • more • less
Q.18 Stool habit	<ul style="list-style-type: none"> • irregular • regular • regular but sometimes irregular
Q.19 Stool consistency	<ul style="list-style-type: none"> • hard • semi solid • well formed
Q.20 Stool color	<ul style="list-style-type: none"> • blackish • yellowish • mikd yellowish
Q.20 Sleep character	<ul style="list-style-type: none"> • interrupted and less • uninterrupted and less • sound and profound
Q.21 Sleep duration	<ul style="list-style-type: none"> • 6 hrs • 6-8 grs • 8 hrs or more than 8 hrs
Q.22 Excitement	<ul style="list-style-type: none"> • Quickly and cool down quickly • Quickly and does not cool down quickly • Rarely
Q.23 Working style	<ul style="list-style-type: none"> • Fast • Medium • Slow
Q.24 Other movements	<ul style="list-style-type: none"> • Fast , unnecessary • Medium, precise • Slow steady
Q.25 Strength	<ul style="list-style-type: none"> • Less, feel , exhausted after doing some work • Medium , moderately gets tired • Good , do not feel tired
Q. 26 Style of tackling the problem	<ul style="list-style-type: none"> • Worrying continuously without expressing • Losing self control , becoming angry
Q. 27 Control on desires	<ul style="list-style-type: none"> • Hardly doesn't work hard for the same • Can not work hard • Can control easily
Q. 28 Concentration on work	<ul style="list-style-type: none"> • Lack of concentration • Can concentrate on thing of interst

	<ul style="list-style-type: none"> • Can easily concentrate
Q.29 Cognition process - grasping	<ul style="list-style-type: none"> • Quick and poor • Quick and good • delayed
Q.30 Cognition process – Store	<ul style="list-style-type: none"> • poor • average • good
Q.31 Cognition process - memory	<ul style="list-style-type: none"> • less • average • good

Discussion :

The body of a human being consists of approx 70 % of water. Water is needed for metabolism , absorption of nutrients, regulation of body temperature ,oxygen transport to cells ,in short water has various physiological roles A human being can survive without food but cannot survive without water. Water is one of the crucial nutrients for all forms of life. Drinking of adequate amount of water is necessary or it leads to dehydration. Dehydration grades varies , mild dehydration occurs when 1-2% of total body fluid are lose, severe dehydration occurs when the body loses more than 5 % of total body fluids [7]. Water requirement is increased in young children , pregnant women , lactating women , elderly person , people having illness. *Ayurveda* has explained about practice of drinking water habits for keeping bacon of the health , avoidance of illness. Water should not be consumed in less or excess amount is harmful for health hence so it should be consumed in optimum quantity in order for maintaining the body physiological activities. It is given in *Samhita* that out of four parts of stomach amount equivalent to one part water should be consumed at the time of meal [8]. Particular effects of water on the health with respect with the intake of meals have been explained in the *Samhitas* [9] .Water consumed before the meal causes weight loss. Drinking water intermittently along with food causes strengthening of the body leading to maintenance of weight and health. Drinking of water just after meals leads to obesity. Water safeguard as umbrella when it is consumed on thirst urge and after intake of the food [10]. Drinking of water in the morning assist in the *Vayasthapan* in the healthy persons with respect to their constitution, especifically in the *Sama Prakriti*. *Ayurveda* has also described about the specific indication of types of water in specific diseases . Cold water is indicated in diseases like *Trishna (thirst) , Madatyaya(alcoholism) , Chardi(vomiting) , Klam, Bhrama , Daha , Pittaj Vikar, Visha and Pittaj Mutrakriccha*[11]. Cold water drinking should be contraindicated in person suffering from rhinitis , sore throat , hikka, pleural effusion . *Ushnodak* is indicated in diseases like *Pinasa, Rhinitis, Hiccup, Dyspnoea, Kasa, fever , obesity, after & during Panchkarma*, disorders of throat, flatulence, thirst. *Ushnodaka* causes *Agnideepti , Kaphavatahara*, detoxification , improves digestion , reduces weight, increases sweating , decreases arthritis. It is used as *Anupana* as it helps drugs to spread rapidly in the body . Boiled and then cooled water is advised to take in *Pitta dosha* conditions. Hot water is cavalier over cold water in the management of the upper respiratory tract infection because drinking hot water increases the nasal mucus velocity [12] Drinking water habits and quantity varies with respect to age , gender and physical work. Drinking water moderately decreases the orthostatic tachycardia in the patients .Reduction in the water intake in the patients with type 2 diabetes deteriorates the glucose regulation [13] . Increased water drinking reduces the

risk of developing kidney stones [14] . A number of related studies are available[15-20]. A person who is vata predominant prakurtti should drink two pala of water. A person who is pitta predominant prakurtti should drink three pala of water. A person who is kapha predominant prakurtti should drink one pala of water. The Madanapal Nighantu , chapter name Panlyadivarga mentioned about the time required for digestion of water . The water which is not boiled , plain requires three hours for the digestion. The water which is cold requires one and half hour for the digestion. Ushnodaka requires forty- eight mimutes for the digestion .

Conclusion:

Water is the magical potion of the life. Water is the most indispensable component of a human life adjacent with the air. Water is a crucial nutrient which carry out countless integral roles in the human body. It function as a building material; as a solvent, reaction medium, reactant; as a porter for nutrients and waste products; in the thermoregulation and as a lubricant and as shock absorber. The regulation of water balance is very specific and is vital for the maintenance of health and life. Daily intake of water is not same for every person as it varies with the Agni, age, gender, diet and physical activity of every person. According to the season and the specific state of *Dosha*, specific water is indicated in different season. Medicated water intake is advised as per the disease which helps in balancing the vitiated Doshas. Water is an obligatory for our survival. *Ayurveda Samhita* advices not to drink too much water drinking during meal, before or after meal as it reduces Agni that is it dilutes the bile. The best habit is to drink water 30 minutes before the meal in order ferret out the system and improves the digestion. Drinking a glass of water after waking up in the morning leads to flushing of the toxins which were accumulated during the night. In the same way intake of one glass of water before going to bed reduces *Vata* and *Kapha* and prevents indigestion. It also cleans urinary tract. *Ushnodak* is one of the care one can do for his/her body. Intake of contaminated water leads to waterborne diseases like typhoid, cholera, dysentery, gastroenteritis, amebiasis , worm infection, cryptosporidiosis .

Consent: - Before the interview, the informed consent of the participants has taken.

Ethical Approval:- The cross-sectional survey conducted for six months for that approval has taken from the Institutional Ethical Committee IEC, Mahatma Gandhi Ayurved College, Hospital & Research Centre, Salod (H). Reference No. MGACHRC/IEC/June -2021/225

References:

1. Srikanthamurthy, K., Eds., 2012. Shushrut Samhita, English Translation. Varanasi: Chaukhamba Orientalia, Sutrasthan 41/3, pp.290.
2. Acharya Y.T. Eds., Charaka Samhita. Varanasi: Chaukhamba Sanskrit Sansthan 2001, ChikitsaSthana 15/39-40. pp. 516.
3. Das Bhagwan Eds., Ayurveda SoukhyamTodaranda , New Delhi: Concept Publishing Company 1980 , Chapter 14/90 , pp.232.
4. Upadhyay, Y., Eds., VagbhataAstanghrdayam with Vidyotini commentary of KavirajaAtridev Gupta. Varanasi: ChoukhambaPrakashan 2009,Sutrasthan 8/46, pp.103.

5. Sushrut Samhita with Nibandhsangrah commentary of Dalhana Sutra Chikitsa 27/6 retrievedfromniimh.nic.in/ebooks/esushruta.
6. Madhava Nidana with Madhukosh commentary by Vijayrakshit chapter 6/7-8 retrieved from niimh.nic.in/ebooks/emadhavnidana.
7. Szinnai, G., Schachinger, H., ArNAUD, m.j., Linder, L., Keller U., (2004), Effect of water deprivation on cognitive motor performance in healthy men and women, American Journal of Physiology Regulatory Integrative and Comparative Physiology, 289, 275-280.
8. Upadhyay, Y., Eds., Vagbhata *Astanghrdayam* with Vidyotini commentary of Kaviraja Atridev Gupta. Varanasi: Choukhamba Prakashan 2009, Sutrasthan 5/15, pp.52.
9. Upadhyay, Y., Eds., Vagbhata *Astanghrdayam* with Vidyotini commentary of Kaviraja Atridev Gupta. Varanasi: Choukhamba Prakashan 2009, Sutrasthan 8/46, pp.103.
10. Ghanekar B. G. Vaidyakiya Subhashit Sahityam Varanasi: Chaukhamba Sanskrit Sasthan 1993, chapter 10/19 pp.67.
11. Acharya Y.T. Eds., Charaka Samhita. Varanasi: Chaukhamba Sanskrit Sansthan 2001, Chikitsa sthana 22/57. pp. 570.
12. Saketkhuo K, Januszkiewicz A, Sackner M. Effects of Drinking Hot Water, Cold Water, and Chicken Soup on Nasal Mucus Velocity and Nasal Airflow Resistance. *Chest*. 1978;74(4):408-410. doi:10.1016/s0012-3692(15)37387-6.
13. Evan C. Johnson, Costas N. Bardis, Lisa T. Jansen, J.D. Adams, Tracie W. Kirkland, Stavros A. Kavouras, Reduced water intake deteriorates glucose regulation in patients with type 2 diabetes, *Nutrition Research*, Volume 2017 Jul; 43:25-32.
14. Xu C, Zhang C, Wang XL, Liu TZ, Zeng XT, LiS, Duan XW Self-fluid management in prevention of kidney stones: A PRISMA- Compliant Systematic Review and Dose –Response Meta- Analysis of Observational Studies. *Medicine (Baltimore)*. 2015 Jul;94(27):e1042.
15. Giri, D., Wairagade, S., Desai, P., Agrawal, A., Jha, R.K., 2020. Relation between Prakriti and stress handling capacity: An observational study. *International Journal of Current Research and Review* 12, 103–109. <https://doi.org/10.31782/IJCRR.2020.121512>
16. Bhutada, R.S., 2019. The effect of eye exercise, Triphala Kwath Eyewash, and instillation of distilled water on computer vision syndrome. *Journal of Datta Meghe Institute of Medical Sciences University* 14, S78–S82. https://doi.org/10.4103/jdmimsu.jdmimsu_202_19
17. Shelotkar, P., Borage, S., 2020. Concept of infectious diseases in Ayurveda. *International Journal of Research in Pharmaceutical Sciences* 11, 4756–4759. <https://doi.org/10.26452/ijrps.v11i3.2766>
18. Wajpeyi, S.D.M., 2019. Concept of bioethics in Ayurveda. *Journal of Datta Meghe Institute of Medical Sciences University* 14, S107–S109. https://doi.org/10.4103/jdmimsu.jdmimsu_204_19
19. Bhojar, S., Chandankar, S., Tirpude, S., Chouragade, N., Joshi, A., 2020. Importance of sanskrit language in learning ayurveda. *International Journal of Current Research and Review* 12, 73–75. <https://doi.org/10.31782/IJCRR.2020.121615>
20. Parameshwar Reddy, V., Meshram, R.J., Chaudhari, S.S., 2019. Fluid balance in critically ill children admitted in picu. *International Journal of Pharmaceutical Research* 11, 1449–1453. <https://doi.org/10.31838/ijpr/2019.11.03.160>