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An Observational Study to assess the influence of *Ahara* on *Manasa Bhavas*

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A B S T R A C T

In *Bhagawad Gita*, the three types of food have been described: they are *Satwika, Rajasika* and *Tamasika* it contribute towards the growth of the same temperament in the mind. *Manas* is one of the factor influenced by *Ahara*. *Manasa Bhavas* are defined as physiological states of *Mana* like *Kama, Krodha, Lobha, Moha, Harsha* etc. When these *Manasa Bhavas* are disturbed then they are considered as abnormal and constitute a pathological state of *Mana* leading to *Manasa Vikaras*. This study was helpful in assessing the behavior of an individual based on their food habits in turn it can demand us to suggest type of food which can be congenial behavior. It was an Observational study where 160 Subjects were selected as per the inclusion and exclusion criteria Self-validated questionnaire was given to assess the type of *Ahara* and *Manasa Bhava*. Chi square test and Cramer's V value were applied to analyze the level of significance.

Key words: *Ahara, Manas, Manasabhava, Rajasika Ahara, Tamasika Ahara, Health.*

INTRODUCTION

Ahara is an important component of *Trayopastambha.*[1] It recommends good and ideal food should be consumed for attaining and sustaining healthy life. According to *Sushruta, Swasta* is defined as 'Individual who has equal and homogeneous state of *Dosha* (body humor), *Agni* (digestion), *Dhatu* (body tissues), *Mala* (excretion of body wastes), *Kriya* (physiology) and *Prasanna Atma, Indriya* and *Manas* (cheerful Soul, Sense Organs and Mind).[2] WHO has also defined, 'Health is a state of complete Physical, Mental and Social well-being not merely absence of disease or infirmity. Healthy life depends on healthy body with mind. Mind is equally important in being healthy.[3] *Charaka* has stated that, *Sharirika Roga* and *Mansika Roga* can interchange into each other.[4] If individuals have healthy body but don't possess a healthy mind then he may get ill sooner or later. An unhealthy mind can affect our life and body gradually.

A Hindu mythology, *Bhagavad Gita* acknowledges that, food has major role in physiological and psychological growth. It categorizes food into three groups such as *Satvika, Rajsika* and *Tamsika*.[4] *Manas* also categorized into these three.[5] *Mana has* all these three *Gunas*, but it swings between these three frequencies according to the deeds person does frequently. *Satvika* food enhances vitality, energy, health, joy and cheerfulness. *Rajasika* foods are bitter, saline, over hot, sour, dry pungent and also causes pain, grief and sadness. Foods which are stale, stinky, tasteless, cooked over night and impure are *Tamasika*. Food types what we consume becomes conducive to growth of their respective nature. *Satvika* food promotes *Satvika* nature and *Rajsika* and *Tamsika* food support their respective personality.

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MATERIALS AND METHODS

Study design

Type of study: Survey method was considered for the data collection through questionnaire.

Pilot study on 37 samples has done to validate the *Ahara* and *Manasa Bhava* questionnaire in non-sampled area.

Table 1: Result of *Ahara* questionnaire & *Manasa Bhava* questionnaire.

Questionnaire	Reliability Statistics	
	Cronbach's Alpha	No. of Items
Ahara	0.878	131
Manasa Bhava	0.774	20

As per the statistics, reliability coefficient of 0.70 or higher is considered "acceptable."

METHODOLOGY

Source of data: 200 subjects from Government Science College, Hassan were screened and Healthy male and female individual were selected as subjects.

Method of collection of data

160 completely filled questionnaires were used as samples.

Inclusion criteria

- Healthy volunteers
- Gender: male and female
- Age group: 18 to 30 years.

Exclusion criteria

- Individuals who were diagnosed as chronic diseases, Systemic disorders, congenital anomalies, mentally retarded.
- Individuals below 18 and above 30 years of age.

Plan for the study

- Self-graded questionnaire to assess *Ahara* and *Manasa Bhava*.
- Selecting 160 individuals.

- Comparison of type of *Ahara* consumed and *Manasa Bhava* of the individual.

Assessment criteria

- For *Ahara* - Self-graded Questionnaire is used to assess the type of *Ahara* consumed.
- For *Manasa Bhava* - Questionnaire from the previous study by Dr. Elgeena "A study on analysis of *Manasa Bhava* with special reference to *Ratri Jagarana*" was considered.

RESULTS & DISCUSSION

Food items

To check what type of food is eaten by the subjects in the beginning part of the questionnaire they were asked breakfast, lunch and dinner. In the list of common foods that were eaten by the subjects for all the three meals is almost similar and prepared food. This may be because those foods are staple diet of the place and is consumed by all.

Food articles

a. Non-veg

i. Egg

Among the non-vegetarian food, it was found that the most of the subjects consumed egg more frequently. Eggs are the rich source of protein, fats and micronutrients. Minerals and vitamins present in the egg helps in regular functioning of cells, including the nervous system, brain, memory and metabolism. Choline present in the egg uses to create acetylcholine, which regulate mood and memory. In Ayurveda egg is considered as *Tamasika Ahara*, but less *Tamasika* than *Mamsa*. It is *Madhura Rasa, Guru Guna* and *Ushna Veerya*. Decreases *Vata*, increases *Pitta* and *Kapha*. Benefits are *Balya, Stira, Vrishya* etc.,

Table 2: Chi square value

SN	Relation between type of *Ahara* and *Manasa Bhava*	P value	V value
1.	Egg and *Medha*	0.016	0.227
2.	Egg and *Avasthaana*	0.030	0.218

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b. Vegetables

Vegetables are also called as protective foods and are rich in vitamins and minerals. Vegetables usually have a large water content, low energy and protein content and varying amount of dietary fibers. Vegetables are dividing into roots and tubers, green leafy vegetables and others.

i. Green leafy vegetables

Curry leaves: It contains proteins, carbohydrates, fiber, minerals, Vit-C, Vit-A, calcium etc. pharmacological activities are Anti-diabetic, reduces cholesterol, Anti-microbial, anti-oxidative etc

Table 3: Chi square value

SN	Relation between type of *Ahara* and *Manasa Bhava*	P value	V Value
1.	Curry leaves and *Avasthana*	0.026	0.220

ii. Roots and Tubers

Onion: It is rich in several phytonutrients, contains vitamins and minerals. It is also rich in sulphur amino acids and contains high levels of phenolic compounds. It acts as antioxidant, anti-melanogenesis, antispasmodic etc. In Ayurveda it is called as *Palandu* it is having *Madhura* and *Katu Rasa*, Guru-*Snigdha-Teekshna Guna*, *Anushna Virya*, *Madhura Vipaka*. It acts as *Vatahara, Vrishya* and *Rasayana*. It is considered as the *Rajasika* as well as *Tamasika Ahara*. It feed the body at the expense of the mind, stimulates passions that cause restlessness etc.

Table 4: Chi square value

SN	Relation between type of *Ahara* and *Manasa Bhava*	P value	V value
1.	Onion and *Mana*	0.024	0.221

Potato: It is having basic nutrients such as - carbohydrates, dietary fibre (skin), several vitamins like Vit-C, Vit-B6 and minerals like potassium, magnesium etc. Potato also has a high glycaemic index. In Ayurveda it is called as *Aluka.* It is having *Madhura, Katu Rasa* and *Sheeta Veerya*. It is mentioned as the worst kind of tuber since it is *Vishtambhi* (constipating), *Durjara* (difficult to digest), *Rooksha* (dry) and increases *Kapha* and *Vata.*

Table 5: Chi square value

SN	Relation between type of *Ahara* and *Manasa Bhava*	P value	V value
1.	Potato and *Upadhi*	0.043	0.212

Others

Beans: Beans are the rich source of dietary fiber. Fresh green beans are very low in calories. It contains Vitamines like Vit-A, Vit-B1, B6, Vit-C and minerals like iron, calcium, magnesium, Potassium etc. one of the benefits is as it is having folate, adequate folate consumption can prevent an excess of homocysteine in the body. Too much of homocysteine can stop blood and other nutrients from reaching the brain and it can interfere with the production of hormones like serotonin, dopamine and norepinephrine which regulate mood, sleep and appetite. Beans are having *Katu Rasa* and *Ushna Veerya*.

Table 6: Chi square value

SN	Relation between type of *Ahara* and *Manasa Bhava*	P value	V value
1.	Beans and *Chinta*	0.029	0.218
2.	Beans and *Driti*	0.034	0.216
3.	Beans and *Avasthana*	0.024	0.221

Tomato: It is an important source of bioactive compounds with known beneficial effects including vitamins, carotenoids, phenolic compounds and phenolic acid. Vit-C and Carotenoids acts as antioxidant that is involved in anxiety, stress, depression and elevates the mood. It is *Madhura, Amla Rasa, Sheeta Veerya, Amla Vipaka.*

Table 7: Chi square value

SN	Relation between type of *Ahara* and *Manasa Bhava*	P value	V value
1.	Tomato and *Driti*	0.009	0.235
2.	Tomato and *Shraddha*	0.001	0.262

c. Fruits

Banana: Bananas are rich source of potassium. It is loaded with essential vitamins and minerals such as potassium, calcium, manganese, iron, folate etc. potassium and magnesium gives energy to the brain

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and increases the ability to pay attention and learn. Vitamins improve the cognitive function. Amino acid like tryptophan present in the banana produces the hormone like serotonin. It is called as *Kadali* in Sanskrit. It is having *Madhura Rasa, Guru* And *Snigdha Guna, Sheeta Veerya, Madhura Vipaka.* It is *Pitta-Vatahara*.

Table 8: Chi square value

SN	Relation between type of *Ahara* and *Manasa Bhava*	P value	V value
1.	Banana and *Priti*	0.040	0.213
2.	Banana and *Upadhi*	0.39	0.214

d. Cereals

Wheat: Wheat contains dietary fibers, protein, carbohydrates, minerals and vitamins like Vit-B6, thiamin, Niacin. A protein rich diet helps build muscles and stamina and a diet rich in carbohydrates creates a calming effect. Thiamine, has a potent reaction on our moods, it increases the well-being, sociabilitiy and over all energy level. Niacin helps in boosting the brain.It is called as *Godhuma* in Sanskrit. It is having *Madhura Rasa, Snigdha* and *Guru Guna.* It is *Balya, Bruhmaniya* and *Vrishya.*

Table 9: Chi square value

SN	Relation between type of *Ahara* and *Manasa Bhava*	P value	V value
1.	Wheat and *Bhaya*	0.12	0.248

e. Millets

Ragi: *Ragi* is called as Finger millet. It is a rich source of Calcium. It contains all the Essential macronutrients - Proteins, Carbohydrates, Fats along with note worthy levels of key Micronutrients - Vitamins and Minerals. It also contains Dietary Fiber, Antioxidant, Phytates, Polyphenols and Tannins etc. Eating ragi in controlled portions on a daily basis assists in enhancing nerve impulse conduction, activating memory centers in the brain and relaxing the mind, due to elevated levels of the amino acid tryptophan. As the tryptophan brings about equilibrium in the levels of serotonin, ragi maintains good mood and promotes good sleep.

Table 10: Chi square value

SN	Relation between type of *Ahara* and *Manasa Bhava*	P value	V value
1.	Ragi and *Mana*	0.024	0.221
2.	Ragi and *Vignana*	0.005	0.243

f. Pulses

Pulses comprise a variety of grams like Bengal gram, Green gram, Black gram, Red gram etc. Pulse grains are an excellent source of protein, carbohydrates, dietary fiber, vitamins, minerals and phytochemicals. Pulses are rich in proteins, minerals and vitamins. In germinated pulses contain high concentration of proteins and a vitamin especially Vit-C and B. Folic acid present in the sprouted grains helps I normal functioning of brain, folic acid deficiency is associated with depression and normal brain function. Diet rich in protein is good for muscle building and stamina; it inhibits the circulation of Serotonin in the brain. Increased levels of Serotonin are linked to mood elevation, it helps regulate sleep so one does not get cranky due to sleep deprivation, and it helps regulate appetite, helps during premenstrual trauma and helps keep control on impulsive behavior. They also contain high in dietary fiber, antioxidants, etc. Green gram is having *Madhura, Kashaya Rasa, Snigdha Rooksha* and *Laghu Guna.* Black gram is having *Madhura, Kashaya Rasa, Snigdha, Guru Guna.* Red gram and begal gram having *Madhura, Kashaya Rasa, Snigdha, Laghu Guna*.

Table 11: Chi square value

SN	Relation between type of *Ahara* and *Manasa Bhava*	P value	V value
1.	Bengal gram and *Bhaya*	0.003	0.268
2.	Bengal gram and *Vignana*	0.027	0.219
3.	Bengal gram and *Sanjna*	0.033	0.216
4.	Green gram and *Dwesha*	0.014	0.229
5.	Green gram and *Mana*	0.041	0.213
6.	Green gram and *Driti*	0.024	0.221
7.	Green gram and *Vignana*	0.005	0.244

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8.	Green gram and *Smriti*	0.020	0.224
9.	Black gram and *Dwesha*	0.044	0.231
10.	Black gram and *Driti*	0.050	0.226
11.	Black gram and *Harsha*	0.042	0.243
12.	Red gram and *Avasthana*	0.044	0.211

g. Nuts

Coconut: It is rich in dietary fibers, vitamins and minerals. It also contains phenolic compounds. Magnesium gives energy to the brain and increases the ability to pay attention and learn. Vitamins improve the cognitive function etc. It is called as *Narikela* in Sanskrit. It is having *Madhura Rasa, Guru, Snigdha Guna*.

Table 12: Chi square value

SN	Relation between type of *Ahara* and *Manasa Bhava*	P value	V value
1.	Coconut and *Driti*	0.016	0.228

h. Oil

Sunflower oil: Sunflower oil is produced via the pressing of the seeds of the common sunflower plant (*Helianthus annuus*). Mainly it contains 65-75% omega-6 polyunsaturates, principally the essential fatty acid (EFA) linoleic acid (LA), 20-40% monounsaturates (principally the omega-9 oleic acid (OA). Oil contains rich in Vit-E. High content of Vit-E levels were associated with better cognitive performance.

Table 13: Chi square value

SN	Relation between type of *Ahara* and *Manasa Bhava*	P value	V value
1.	Sunflower oil and *Bhaya*	0.014	0.245
2.	Sunflower oil and *Shila*	0.000	0.344

i. Dairy products

Milk: Milk is a good source of Proteins, Fats, Sugars, all Vitamins except Vit-C, almost all minerals. Casein is the chief protein and rich in calcium. Protein helps in production of neurotransmitters which is needed for regular maintenance of brain, cognitive performances, relieves stress etc. Vitamins improve the cognitive function.

Table 14: Chi square value

SN	Relation between type of *Ahara* and *Manasa Bhava*	P value	V value
1.	Milk and *Priti*	0.059	0.206

Curd: Curd contains protein, carbohydrates, calcium, phosphorus, vitamins and minerals. Yoghurts are probiotic carriers and they have mildly sour taste with smooth texture, aroma and pleasant flavor. It has been reported that yoghurts are rich nutritional sources such as fat, high biological value protein, calcium, zinc, potassium, magnesium, phosphorus, riboflavin (vitamin B 2), thiamine (vitamin B1), vitamin B6, vitamin B12, niacin, folate etc.

Table 15: Chi square value

SN	Relation between type of *Ahara* and *Manasa Bhava*	P value	V value
1.	Curd and *Dwesha*	0.28	0.219

j. Spices

In the article "Spices in a Product Affect Emotions: A Study with an Extruded Snack Product" it is concluded that the spice blends had an effect on the intensity of emotions that appeared independent of acceptance or the clinical glycemic index. The duration of a particular emotion's intensity was also affected by spice or lack of spice. Spices seem to increase certain emotional intensities immediately after consumption, but these intensities generally diminished after one hour post-consumption.

Table 16: Chi square value

SN	Relation between type of *Ahara* and *Manasa Bhava*	P value	V value
1.	Garlic and *Chinta*	0.044	0.212.
2.	Garlic and *Shraddha*	0.039	0.213
3.	Cumin and *Mana*	0.050	0.209

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4.	Cumin and *Vignyana*	0.050	0.209
5.	Turmeric and *Driti*	0.050	0.214
6.	Turmeric and *Sila*	0.027	0.220
7.	Ginger and *Bhaya*	0.039	0.225
8.	Ginger and *Priti*	0.042	0.212
9.	Pepper and *Driti*	0.004	0.246
10.	Clove and *Shoka*	0.008	0.237
11.	Clove and *Driti*	0.047	0.210
12.	Clove and *Shraddha*	0.050	0.208
13.	Clove and *Driti*	0.047	0.210
14.	Mustered and *Priti*	0.012	0.232
15.	Mustered and *Sanjna*	0.017	0.226
16.	Cinnamon and *Driti*	0.003	0.240

k. Beverages

Coffee: Caffine in the coffee has stimulant effectsand increases alertness but too much coffee can make a person nervous and anxious.

Table 17: Chi square value

SN	Relation between type of *Ahara* and *Manasa Bhava*	P value	V value
1.	Coffee and *Kroda*	0.001	0.264
2.	Coffee and *Virya*	0.030	0.218

In all the results there is significance but low association.

Triguna concept of *Ahara.*[5]

In *Bhagavad Geetha,* three types of food are mentioned. They are *Satwika Ahara, Rajasika Ahara* and *Tamasika Ahara.*

Table 18: *Guna* and *Karma* of *Satwika, Rajasika* and *Tamasika Ahara.*

SN	Type	Guna	Lakshana
1.	*Satwika Ahara*	• *Ayu* (which increases lifespan) • *Satwa* (natural/which is good for mind) • *Bala* (which gives strength) • *Arogya* (healthy food) • *Sukha* (which causes happiness) • *Preeti* (which gives pleasure) • *Vivardana* (nourishing)	• *Rasya* (liquid items like milk, fruit juice etc., • *Snigdha* (unctuous) • *Stira* (compact/ durable/ longlastig • *Hiridya* (pleasing to heart/ savoury
2.	*Rajasika Ahara*	• *Katu* (Pungent/ ascrid) • *Amla* (sourness) • *Lavana* (salty) • *Atiushna* (hot potency)	• *Teekshna* (sharp) • *Ruksha* (dry) • *Vidahi*(which causes burning)
3.	*Tamasika Ahara*	• *Yatayama* (food after 3 hrs of preparing) • *Gatarasa* (stale) • *Puti* (foul smelling) • *Paryushita* (last night prepared food) • *Ucchista* (rejected/ left over/ food eaten by others)	• *Amedhya*

Satwika Ahara: These are fresh, natural, organically grown, that possess all six *Rasa*, easily digestible, nutritious, which provide energy to the body and as unrefined as possible.[6]

Examples: Fresh fruit, vegetable juices, dairy products (milk, ghee), some grains like rice, water, green tea and herbal tea and natural sugars like honey.

*Rajasika Ahara***:** These are too spicy, too hot, too pungent, too salty or too sour. Very dry food and *Rajas* are responsible for stimulating activity hence, food which makes to do action / stimulating.[7]

Examples: Fruits - sour apple, guava, banana. Grain - bengal gram, green gram, ground nut, etc., Vegetable - patato, tomato, beans, chilli, etc., Onions, garlic are both *Tamasic* and *Rajasic.* Dairy - butter milk, curd etc., It includes non-vegetarian food like meat, fish, eggs, and chicken, All pulses and dals. Legumes which creates wind. Foods that have been fried in oil, baked in too much butter, cooked too much and beverages like coffee.

*Tamasika Ahara***:** Everything that is not fresh. All food that is overcooked (for more than 3 hours), stale, decaying, refined, reheated food and left overs are considered *Tamasic*.[8]

Examples: Overeating, Fermented foods, such as vinegar. Onions, garlic leeks, mushroom, broccoli etc, Preservatives containing food etc., Fart and ready to cook food, canned or frozen food. Meat like Beef, pork, lamb and dark meat chicken/turkey are *Tamasic*. Incompatible foods. Beverages like coffee, tea and alcohol.

CONCLUSION

Ahara not only nourishes the body it also nourishes the *Manas*. *Ahara* which are consumed by the subjects are in prepared form. Though subjects are using the *Satwika Ahara*, they are preparing and consuming along with *Rajasika Ahara*. In daily practice almost all the subjects were consuming food vegetables, grains, pulses etc., which are *Rajasika Ahara.* Some subjects used to consume junk food, bakery items, egg, leftover food which are *Tamasika Ahara* by reheating it. Nutrients present in the food influences cognitive abilities like attention, memory, thinking, learning and perception etc. It is noted that Diets like egg, milk, ragi, pulses were influencing memory, joy, alertness, concentration. It is because secretion of neurotransmitters like dopamine, serotonin etc. are influenced by these diets. Beverages like coffee influences on *Kroda* and *Virya*.

Caffeine present in the coffee has stimulant effect and increases alertness. Hence, in this study it was found that subjects were consuming *Rajasika* and *Tamasika Ahara* and there is an influence to a certain extent. In the results we can also notice that there is not much difference between expected value and obtained value. This shows that there is an influence of *Ahara* on *Manas Bhavas* but whether it is influenced positively or negatively and in what extent is unidentified. *Manas* is also influenced by confounding factors like work, environment, place etc. Hence it can be concluded that *Manas* is not only influenced by *Ahara*, it is also influenced by other confounding factors.

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