

A Link between Anxiety and Sattvik Food as a Potential Pathway

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Abstract

One of the main causes that has put a person's social and physical health under stress but also significantly impacted their mental health is epidemic. The most prevalent and well observed mental condition is anxiety. It can cause a paradigm shift in the eating habits of an individual. The 5000-year-old Indian medical system Ayurveda, which educates about hostile care for the mind, body, and spirit relates major psychological stress like anxiety with improper diet. Following a sattvik diet helps a person lead a stress-free life and reduces a person's risk of illness to mental disorders like depression, anxiety, mood disorders, and hyperacidity; Sattvik diet/ aahar is considered as one of the safe, organic and energetic food. People who eat a diet high in whole food such as fruits, nuts, whole grains, legumes and unsaturated fats are up to 35% less likely to develop depression than those who eat less of these. A healthy digestion of meal with proper engagement of gastric juices, its digestion and absorption are directly related to hormonal balance and production of serotonin level.

Key Words: sattvikahar, health, ayurveda, psychologicalstress, mentaldisorders, anxiety

Introduction

Stress can be defined as "the generalized, non-specific response of the body to any factor that overwhelms, or threatens to overwhelm, the body's compensatory abilities to maintain homeostasis" (Sherwood, 2015). Stress can be more related to acute stress i.e., short term stress and chronic stress i.e., long term stress. People suffering with acute or chronic stress often experience certain physiological changes like slowed gastric emptying, elevation of blood pressure, increase in heart rate, mobilization of energy stores, and decrease in blood flow to non-essential organs, e.g., the digestive system, kidneys,

and skin. Many unfavorable consequences, including chronic degenerative and noncommunicable illnesses including diabetes, cancer, and hypertension, have long been related to stress.

Epidemic became one of the major reasons which not only stressed out an individual's social and physical health but also affected mental health in major aspects. Out of all mental disorders, anxiety is the most common which can be seen day in and out. The symptoms of pathological anxiety are persistent, severe, or disruptive to day-to-day activities (Gale, C.K. *et al.*, 2011). To top this situation people's shift to unhealthy eating to find some comfort to overcome

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their anxiety. The world of today has adjusted to a way of eating that has several harmful impacts on health. Anxiety is so common that it is often linked to cooccurring disorders and can cause a paradigm shift in the eating habits of an individual (Bhasarkar *et al.*, 2021). The appetite and food intake can be increased by eating foods with pleasing flavors, aromas, and textures. Additionally, it has been demonstrated that emotions other than hunger, such as stress, anxiety, despair, and boredom, impact feeding behavior (Sherwood, 2015). Some people tend to overeat and therefore consume a lot of unhealthy food. People having persistent anxiety, or an anxiety disorder are more likely to have long-term heightened levels of corticotrophin-releasing factor (CRF) hormones in their system. One such hormone; Serotonin is agreeably said to be a happy hormone and is also involved in brain functions. One of the major roles of this hormone is to inhibit gastric secretions. Reduced levels of serotonin in the brain may lead to memory problems, mood disorders and may drop a person into anxiety and depression (Bhasarkar *et al.*, 2021).

Ayurveda which is first Indian medicine system is 5000-year-old teaches about holistic care addressing the mind, body and spirit. It inevitably explains that food is medicine and focuses on eating right to bring balance in life, exercising, breathing fully, reducing stress, sleeping well, and following all the basics concepts to keep whole body well balanced and healthy. Conventional nutrition science not just focuses on the type, quality and quantity of food but also talks about the ambience within which a particular food is consumed by a person. It is always recommended by well-known dietitians and nutritionists that an individual should sit down and eat a particular meal with a perfect mental attitude and in sound and healthy surroundings. Now a days, people are least concerned about this basic setting and to make this situation worse they are not even alert to the context of hygiene while consuming a meal.

Effects of Unhealthy eating

Eating in inappropriate quantity

Unhealthy eating does not always mean eating foods which are not good for the body, but unhealthy eating also means not eating in appropriate quantity. An inappropriate quantity of food sometimes leads

to under or over nutrition. In ayurveda, there can be a cascade of consequences related to excessive *ahara matra* (food quantity) identified as *Ama* (unripe) and related pathogenesis. *Ama* can be understood as undigested metabolic waste, a byproduct of inefficient digestion. This results in blockade and interruption in normal physiology. Problems like eczema (chronic skin condition), chronic fatigue syndrome, connective and joint tissue disorders are some very common examples associated with *ama* (Rastogi, 2014).

Effects of fried foods

Potatoes are mostly consumed in fried form like French fries hence little is known about acrylamide which is a type of toxin released by deep frying potatoes. Acrylamide is produced during natural chemical reaction when sugars and asparagine (an amino acid in plant-based food) which is carcinogenic in nature. Carcinogenic acrylamide is produced when potatoes are deep-fried (Tareke *et al.*, 2000). Deep-fried meals contain high levels of the toxin 4-hydroxy-trans-2-nonenal (HNE). Food becomes toxic once it reaches room temperature. Numerous cytotoxic and genotoxic consequences are brought on by HNE (Esterbauer *et al.*, 1991). It results in thiol oxidation, metabolic inhibition, and proarrhythmic alterations in cellular excitability. Free radicals are also produced because of fast meals. Almost all biomolecules can interact with free radicals in a variety of ways, changing their inherent characteristics and increasing their susceptibility to harm. All parts of the cellular machinery, including carbohydrates, lipids, proteins, and nucleic acids, are affected by this oxidative damage. Reactive oxygen species (ROS) can also damage DNA by changing its nitrogenous bases, as can the byproducts of their reactions with diverse biomolecules (Valko *et al.*, 2007).

Studies show unpredictable patterns in these sets of genes as cellular mechanism gets majorly affected hence body is prone to diseases. Psychological stress shoots down the body's defense system by suppressing its immunity. Thus, the body becomes vulnerable to innumerable diseases. Some of the evidence of low immunity results in reduced leukocyte count. A person frequently experiencing stress is more prone to cancer also ATF3, which is also known as stress gene, is a crucial link between stress and cancer.

Activated ATF3 gene shows metastatic spread of breast cancer. Although activation and responses of ATF3 gene occurs under stressful conditions. In the presence of activated ATF3 gene normal as well as benign cells often fall into apoptotic condition. But somehow immune system cells show blind response towards cancer cells which travel towards the tumor site and ATF3 gene is expressed. In due course, ATF3 influences immune cells to work in unpredictable patterns which makes cancer cells undetectable and move to different areas of body.

Effects of eating cold foods

Cold or raw food (*sheeta veerya*) or foods which have cold potency reduces enzyme production in stomach. Modern foods like ice cold food and beverages ayurveda explain it that consuming these hinders with digestive gastric juices which ultimately perform poor in the digestion of food and produce a huge amount of *ama*. So, a huge amount of *ama* leads to disease. Due to too much sugar content which causes obesity and CO₂ gas in it which causes acid reflux resulting in GERD later disturbs the environment of Gastrointestinal tract.

Effects of eating reheated or microwaved foods

Another research suggests that when food is reheated again and again after getting cold it not only destroys its nutritional properties but also bacteria start to grow within the food. When this food is consumed it ferments in the stomach and hence it produces air and acidity. This also leads to indigestion of food i.e., production of *ama*. Acidity and excessive salt imbalance the body; in fact, salt has a direct impact on heart rate. Over salination raises body temperature and causes the heartbeat to quicken.

Microwave cooking or heating is also never appreciated by ayurveda as its use's electromagnetic waves to heat food which can potentially change the molecular structure of food resulting in dangerous health outcomes. Consumption of red meat heavily associated with colorectal and prostate cancer and cardiovascular disease also heterocyclic amines combined with a high fat diet can enhance colon carcinogenesis and TMAO produced by gut bacteria from L-carnitine in meat is associated with atherosclerosis and cardiovascular disease (Gerhardsson *et al.*, 1991).

Sattvik Aahar

In the three texts of Bhagwat Gita (verses) it states the following: "Foods in the mode of goodness increase the duration of life, purify one's existence and give strength, health, happiness and satisfaction. Such nourishing foods are sweet, juicy, fattening and palatable. Foods that are too bitter, too sour, salty, pungent, dry and hot, are liked by people in the modes of passion. Such foods cause pain, distress, and disease. Food cooked more than three hours before being eaten, which is tasteless, stale, putrid, decomposed and unclean, is food liked by people in the mode of ignorance."

A sattvik diet is an arrangement that places significance on seasonal food commodities, milk and its products, fresh seasonal fruits, nuts, seeds, fats and oils, seasonal vegetables, lentils and whole grains. Sattvik dishes are vibrant, juicy, light, appetizing, and nourishing. Sattvik meals provide the body with the right quantity of energy. The Sattvik diet is beneficial for spiritual development since it fosters mental clarity and peace. A sattvik diet reduces stress and lowers a person's risk of developing mental illnesses like anxiety, mood disorders, depression, and hyperacidity.

Every food affects physical and mental health differently. Certain food nourishes our body with nutrients and positivity and calmness in mind. As it is rightly said what we eat reflects our mind so supporting the statement the best diet for physical strength, a good mind, good health and longevity is sattvic diet. *Sattvik Aahar* or sattvic diet is purest of all diets as *sattvic* itself means pure. Sattvik Aahar includes sprouted whole grains, fresh fruits, land and sea vegetables, pure fruit juices, nut and seed milk and cheese, legumes, nuts, seeds, sprouted seeds, honey and herbal teas. (Bhasarkar *et al.*, 2021).

Food needs to be prepared and consumed with the right procedure. Although digestion of food starts within the mouth itself but there are different modes of intake of different foods. Complex and heavy food needs to be chewed well and properly mixed with enzymes in the mouth. Enzymes like ptyalin and salivary amylase help in breaking down food into small particles which further easily get mixed with digestive enzymes. Insufficiency

of enzyme causes indigestion of food which is the major cause for undigested metabolic waste. To avoid such complications heavy and complex foods are requested to be consumed in the early hours of the day then consuming them later. Simple foods do not require much time for digestion so they can be consumed in the later hours of the day.

Foods that do not upset the stomach are referred to as sattvik. Our bodies will absorb more nutrients and remain healthy if food is correctly digested in our GI tract. Fresh fruit, pure fruit juices, milk, honey, entire grains that have been sown, land and sea veggies, cheese, nuts, seeds, legumes, sown seeds, and herbal teas are examples of sattvik foods. Sattvik diets help people live stress-free lives and lower their chance of developing mental health problems like depression, anxiety, mood disorders, and hyperacidity. Up to 35% less people who consume a diet rich in whole foods, such as fruits, nuts, whole grains, legumes, and unsaturated fats, are likely to experience sadness. (Sharma, U *et al.*,2019).

Sattvik foods function as body and mind healer

Diets that follow “good” eating habits, the Mediterranean diet, conventional diets, the anti-inflammatory diet, and diets with more variety are all linked to reduced anxiety. Chronic disease risk is minimized by therapeutic diets with clinical use, such as the DASH diet. All these eating regimens have something in common, such a focus on fruits and vegetables, a restriction on refined carbohydrates and sugar, and a higher intake of minimally processed foods. Ayurveda spices such as ginger, turmeric, cinnamon, black pepper, garlic, and other condiments have therapeutic potential. Spices and herbs not just add flavor to a variety of dishes, but they also heal a person inside out. They are excellent sources of bio actives such as curcumin in turmeric, piperine in black pepper, and gingerol in ginger. These bio actives are not just working as anti-inflammatory, antibacterial, and antithrombotic which could protect against oxidative damage by inhibiting and addressing free radical damage but cell signaling, production and regulation of growth factors, cytokines, and eicosanoids are critical factors modulated by bio actives in foods we choose to consume. Thus, this influences our genetic predispositions and lifestyle such as exercise, sleep

and toxic or stressful environment. As discussed, earlier sattvik diet maintains our GI system which is very important for proper digestion and absorption. Recent studies implicate that 90% (Gershon, 2012) of all serotonin in the body is in the GI tract. Commonly known serotonin is known as a happy hormone and body needs a proper balance of this to maintain good mood of an individual.

Conclusion

Ayurveda emphasizes these aspects of life and teaches us to follow basic principles so that our body and mind have a strong connection between them. Ayurveda confirms that a person eating *sattvik ahar* i.e., pure diet will not just have a healthy body with immense physical strength but a stable and calm mind too which will improve decision making skills, maintain healthy social relations, reduce mental fatigue and build strong body and mind connection. Smooth functioning of stomach is very important because if digestion is healthy then most nutrients are being absorbed by the body, building healthy muscles. Also, production of hormones will be optimum, especially serotonin which will help in reducing psychological stress, more specifically anxiety issues. Disease caused by foods which are over cooked, microwaved, processed foods, fast foods, fried and frozen foods etc. are inevitable. So, food should be consumed in its natural state and cooked on fire only once. Sattvik diet functions all in one with eating a healthy and balanced diet i.e., easily digestible helps to build immunity, rapid healthy response and brings harmony between physical and mental health. Sattvik ahar does not agitate the stomach at all. By maintaining a peaceful state of mind and preventing it from any kind of agitation, Sattvik Ahar thus helps in dealing with anxiety.

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Conflict of Interest

Miss. Mansi, Miss. Parul Sharma, and Miss Khyati Jain as author of this research article declare that we have no competing interests regarding this work. We confirm that the manuscript has been read and approved by all named authors and there are no other persons who satisfied the criteria for authorship but are

not listed. We further confirm that the order of authors listed in the manuscript has been approved by all of us. We confirm that we have given due consideration to the protection of intellectual property associated with this work and that there are no impediments to publication, including the timing of publication, with respect to intellectual property. In so doing we confirm that we have followed the regulations of our institutions concerning intellectual property.

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