A REVIEW ON AYURVEDIC PERSPECTIVE OF CAUSATIVE FACTORS LEADING TO STRESS AMONG INFORMATION TECHNOLOGY PROFESSIONALS

S.Gopakumar1*, M.A.Shajahan2
1Associate Professor, Dept of Rogaṇidana, Govt. Ayurveda College, Thiruvananthapuram, Kerala, India.
2Professor and Head, Dept of Dravyagunavijnanam, Govt. Ayurveda College, Thiruvananthapuram, Kerala, India.

ABSTRACT
Being a public health oriented medical science, Ayurveda has high responsibility in addressing job related health problems in different sectors. Stress has become an important aetiopathological factor in a good number of psychosomatic diseases. Stress, in general, is a physical, chemical, or emotional factor that causes bodily or mental tension and may be a factor in disease causation. In other words, stress is defined as the disruption of internal biological equilibrium triggered by external physical, mental or other types of stimuli. IT professionals are prone to develop stress and related health issues because of their high pressure job culture. Stress is never a single pathogenesis, but a wide spectrum of interconnected events, which may result in specific diseases affecting different systems. Ayurveda has a unique tool of Nidanapanchaka to unveil the aetiopathogenesis of any clinical condition. Ayurveda considers Nidana -causative factors as very important in the development of a disease. The nature and strength of Nidana determine the severity of every health problem. Here in the case of stress among IT professionals, multidimensional causative factors have defined role in different stages of pathogenesis. As per Ayurveda, treatment itself is avoiding the Nidana. A detailed understanding of these causative factors in Ayurvedic language will help to explore the stress related diseases in a better way. Classical Ayurvedic understanding of various causative factors related with stress among IT professionals will help to derive specific preventive and management protocols against stress and related clinical conditions.

KEYWORDS: Stress, Nidana (causative factor), Asatmyendriyardha Samyoga (improper contact between sense organs and objects), Vegadharana (Suppression of physiological urges).

INTRODUCTION
Ayurvedic science explains any disease or syndrome on the basis of Nidanapanchaka. Nidanapanchaka include Nidana (causative factors), Purvarupa (Prodromal symptoms), Rupa (signs and symptoms), Upasaya (trial and error method) and Samprapti (pathogenesis)[1]. Nidanapanchaka of different stress related diseases are different. But, since the factors causing the stress and their manifestations are almost common in all cases, a generalized Nidanapanchaka of stress can be formulated by scientific analysis. Among the Nidanapanchaka, Nidana is the initiating factor and hence it is considered to be very important. Any attempt to derive the Nidana of stress should start from the close analysis of the lifestyle of the stressed individuals. IT professionals have a challenging work style due to the high level competition in their job sector. Various life style factors are often disturbed in their daily life. Multidimensional factors in physical and mental domains have strong impact in the manifestation of stress among IT professionals. Nidanas of stress associated with IT professionals come under the category of Bahya (external) and Abhyantara (internal) groups. They can be considered under the titles of Sareerika (physical) and Manasika (mental) factors again. For creative scientific discussion, they could be further discussed under the titles of Utpadaka (primary) and Vyanjaka (precipitating) causes.

Basic Understanding of Different Nidana
Ayurvedic scientific understanding of various types of Nidana with special emphasis on stress among IT professionals is very much relevant in addressing the computer related stress. Bahya Nidanas are the causes which are coming from outside. Ayurveda explains Agantu Nidanas in detail[2]. These Nidanas cause specific Dosha vitiation in the body and mind. Agantu Nidanas include infections, toxic substances, environmental factors, physical strain or trauma and emotional factors. Agantu factors behave as physical and mental causes of stress. Abhyantara Nidana cause specific pathological mechanisms in the body and mind through internal biological factors. Sareerika and Manasika doshas belong to this category. Sareerika Nidanas are related with improper physical activities like postural strain, excessive strain of joints, lack of exercise etc. Sareerika Nidanas cause specific Dosha – Dushya Sammurchana in vitiated Srotases. Manasika Nidanas are directly related with emotional factors. Various emotional challenges in terms of anger, grief, anxiety etc behaves as Manasika Nidana. Utpadaka Nidanas are the primary causes which initiates a new pathological event. Initial Doshakopa is the primary cause or Utpadaka Nidana. Vynjaka Nidanas are the precipitating or aggravating factors which triggers an existing pathology. Exposure to specific environmental factors like dust, toxins and smoke or exposure to sudden unexpected...
emotional trauma can aggravate an existing event and are considered as Vijnaka Nidana.

**General Aetiological Factors of Stress Among Computer Profession**

Computer is the magic machine of current professional domain. But ergonomically, studies have proven that there is also a dark side to this modern wonder of technology. IT professionals experience both physical and mental stress due to various causes. Physical stress factors like continuous work, continuous sitting, overuse of joints etc. lead to different physical conditions like low back pain and neck pain. Psychological or emotional stress factors aggravate physical conditions and lead to mental ill health.

IT professionals experience stress from 2 causes
1. Physical stress factors
2. Psychological stress factors

Physical and Psychological stress can arise from personal and professional frames of one’s life. As far as IT professionals are concerned the stress factors are mainly related with their tensed and mechanical job culture. This job related stress may lead to personal, professional and social problems. Physical and psychological stress has a mutual dependence.

The causes of stress among IT professionals can be considered under the following headings

A. Computer work related
B. Job culture related
C. Personal habits related

The most important causes related with the above three factors are summarized below.
1. Continuous working hours before computer
2. Improper postures and strains to different joints while working with computer
3. Improper height of the monitor may add more strain to neck and shoulder
4. Prolonged key board and mouse usage and improper heights of key board may result in elbow and wrist joint strain
5. Sitting with flexed spine while typing for long time will result in low back strain.
6. Reduced blood circulation when sitting with bent joints for long time in air conditioned cabins.
7. Continuous exposure to computer screen and related eye strain
8. Time management issues
9. Criticisms from higher authorities.
10. Feeling of insecurity in job
11. Emotional upsets due to pressure of the works
12. Disturbances of sleep due to shift pattern of job
13. Untimely food and disturbed life style
14. Addictions taken to face the work load and stress
15. Lack of exercise and leisure activities due to lack of time.

**Ayurvedic Perspective of Causative Factors of Stress Among it Professionals**

Ayurveda, the science of life states that a disease process can only be initiated by Nidana (causes). In the current scenario, job and job related environment plays a significant role in the aetiopathogenesis of many diseases. Thus while discussing the various possibilities of causes in the context of stress in IT professionals, individual and social factors should be included. IT profession is fast developing with so many challenges and hurdles within it. As a result of this ever increasing complexities and pace, persons employed in this field are prone to develop stress and stress related diseases. Information technology profession demands high rate of performance input without much flexibility of time. The complexity of projects, the demand for perfection and severe rate of competition increases the possibility of stress response among IT professionals.

Here, based on Ayurvedic fundamentals, the following factors can be considered as Nidanas of physical and mental stress seen among IT professionals.

1. *Asatmyendriyardha samyoga* (improper contact between sense organs and objects)

Asatmyendriyardha samyoga is one among the three basic Nidana of disease[3]. It denotes the improper contact of Indriya and Ardhha. Asatmyendriyardha samyoga will lead to different clinical conditions by Heenayoga (under manifestation), Athiyoga (over manifestation) and Midhyyoga (wrong manifestation) of Indriyas. The Heenayoga, Atiyoga and Midhyyoga of Jnanendriyas especially Netra are very much relevant among IT professionals. Karmendriyas[8] (organs of work /motor organs) including Hasta (Hand) also suffer from Asatmyendriyardha Samyoga. Mana which is also an Indriya with Udbhayathmaka[9] nature is also affected with Asatmyendriyardha Samyoga in IT professionals. Excessive work in front of the computer monitor, prolonged sitting in front of the monitor are examples of Asatmyendriyardha Samyoga of eye. Working in the dim light of computer cabin is also relevant here. Mostly all who work continuously in front of computers without any protection for their eyes are vulnerable to develop visual problems including dryness of the eyes. Other sense organs are also subjected to stress responses due to Asatmendriyardtha Samyoga. Continuous usage of keyboard and mouse leads to Asatmyendriyardha Samyoga of hand. Other Jnanendriyas (sense organs) like Twak (Skin) which is affected by continuous Sheeta Guna (cold) of air conditioner, Srotar (ear) which is affected by usage of headsets, Jihwa (tongue) influenced by improper food habits and additions during working hours are also important. The Mana which is equally associated with Jnanendriya and Karmendriya is vitiated by both physical and mental factors seen in IT profession.

2. *Prajnaparadha* (Intellectual blasphemy)

Ayurveda considers Prajnaparadha as one of the significant causative factor of diseases[6]. While we consider about stress also, Prajnaparadha is found to be very much relevant. Charaka mentions that Dhivibramsa (impairment of intellect), Dhrtvibramsa (impairment of will) and Smtvibramsa (impairment of memory) are the main causative factors of mental disorders, which lead to evil actions and this stage is defined as a Prajnaparadha[7]. It causes various types of physical and mental disorders i.e.
Irshya (malice), Mana (vanity), Krodha (Anger), Bhaya (fear), Moha (greed), Shoka (sadness) Udvega (anxiety) etc. The evil acts caused by Prajinaparadha leads to the vitiation of physical and mental Dosha and manifested as following features:

- Forcible stimulation of natural urges and suppression of the manifested ones.
- Exhibition of undue strength.
- Over indulgence in sexual act.
- Negligence of time of treatment or care of the body.
- Initiation of action in improper time.
- Loss of modesty and good conduct.
- Disrespect for respectable persons.
- Enjoyment of harmful objects and substances.
- Resorting to the factors, which are responsible for the causation of mental ailments.
- Friendship with people indulged in evil actions.

These evil actions can be included under Sareerika and Manasika Nidanas, which lead to many types of mental disorders. These factors aetiopathologically resemble to the important stress related causes among IT professionals mentioned earlier in the article. Hence it can be concluded that some of the causative factors responsible for stress among IT professionals come under Prajinaparadha. Avoidance of the Prajinaparadha is nothing other than Sadvrita. Sadvrita represents ideal behaviour which ultimately leads to happiness in the individual and society.

3. Parinama

Advent of the maturity as a result of time has been explained by Charaka regarding Sareera dosha. Similarly time factor is also considered as a cause of mental disorders. Ayurveda explains that the result of all improper deeds (Kukarma) will mature in time and when it matures, the person will be afflicted with particular disorders. This is seen in some physical disorders and mostly all mental disorders. Moreover the word DAIVA (God) is equated with the KARMA (action) done by one self. This Karma in due course of time will lead to health and ill health. Here also Ayurveda highlights the importance of time factor and Parinama. Parinama denotes the changes occurring in the due course of time. The heavy workload combined with unhealthy competition among IT professionals cause enormous amount of stress due to improper Karma. General stress responses have a strong relation with the Sareerika and Manasika Karma done by an individual.

4. Suppression of Adharaneeya Vega (natural urges)

Ayurveda describes physical and psychic urges which directly influence the health and ill health of an individual. Vega is defined as Vega pravarthyunnukhath-wam moorthapureeshadeenam by Chakrapanidatta. The normal physiological reflex actions are included under the category of Vega. Vegas are classified into Sareera and Manasika. The main Dosha controlling the Vegaparvartith is Vata. Vegadharana is the physiological suppression and Vegadheerana is the forceful operation of urges. Both of which will lead to pathological conditions in the body and the mind.

Vegadheerana and Vegadharana are equally responsible for various diseases. Due to the peculiar work style and job environment, IT professionals are subjected to some of the following Vegadharanas.

A. Nidra Vegadharana

Nidra is mentioned as Bhoothadhathri as it is an absolute necessity of all living beings. Ayurveda gives high importance to sleep. Sound sleep provides Sukha (happiness), Pushthi (nourishment), Bala (strength), Prishtha (virility), Jnana (knowledge) and above all a good life. Hence if sleep is altered the above modalities will not be achieved. Ayurveda gives high importance to sleep. Acharya Susrutha explains Nidra as Sleshma – Tama combination.

Most of the professionals have shift pattern in their work which disturbs their normal night sleep. In other words they are forced to do Nidra Vegadharana. Continuous Nidra vegadharana leads Gourava of head and eye, Aalasya, Jrimbha and Angamard. Lack of sound sleep during night time leads to Vata Dosha vitiation and this in turn affects the normal physical and mental functions. Thus, lack of sleep during night and compensatory daytime sleep make unwanted changes in their daily life. IT professionals seriously suffer from problems of suppression of sleep. Most of the computer professionals are not able to adjust with their shift pattern of work. Often they have to work continuously during night hours without even a break. Especially those who work in call centers have serious stress problems due to lack of sleep during night time. Since all the higher mental functions are controlled by Vata Dosha, Vata vitiation will aggravate the effects of stress. The effects of lack of night sleep are also reflected in Koshta and Agni. Thus most of the IT professionals who have night time work suffer from diseases of Gastro intestinal system.

B. Kshuth Vegadharana (Suppression of appetite)

Due to the varying timings and tight work schedule most of the IT professionals are not able to follow a normal pattern of food habit. Food taken untimely often leads to disturbances in Koshta and Agni leading to various clinical manifestations in Annavahasrotas. Suppression of appetite leads to hypo activity of digestive fire and this in turn will lead to other systemic manifestations. Diseases like Amlapitha, Parinamasoola, Udavartha which are commonly seen in IT professionals support this view. Suppression of physical urges will aggravate the stress in IT people because Vegadharana will lead to Vatakopa. Vatakopa will definitely produce stress or aggravate the existing stress. Untimely food which is equivalent to Kshuth Vegadharana leads to various clinical manifestations related to GIT. Since Vata is the main Dosha provoked by Vegadharana which controls body and mind, the effect of Vegadharana will be very significant in the stress manifestation of IT professionals.

5. Practice of Dharaneeeya Vegas

Ayurveda very well explains the importance of Adharaneeya Manasikavegas. Psychological responses which are to be controlled) in physical and mental health. The heavy load of work, high level expectation from the firms, professional competitions, project deadlines, and tensed working atmosphere leads to the vitiation of Tridoshas and Raja and Tama. Raga, Lobha, Eershya, etc.
Dvæsa, Matsarya which are the Manasikavegas to be controlled, and are more prevalent among IT professionals due to their professional competition and life style. The above emotional factors lead to the vitiation of Tridoshas and Manasika Doshas. Moreover when one person is emotionally disturbed the normal food taken also will not be properly digested. This leads to Agni related clinical conditions and formation of Ama. Ama in turn will lead to Srotorodha and Aalasya. Vitiation of Manasika Doshas by the above said factors, along with vitiation of Tridoshas and Agni leads to various types of psycho-somatic disturbances in IT professionals.

6. Ahita Aharas

Ayurveda considers man as the product of Ahara. Roga are also caused by Ahara. Improper Ahara leads to different pathologies in the body. Some of the Ahara related pathologies aggravate stress responses and leads to ill health. Contaminated food items, artificial food, fast foods, non vegetarian foods etc come under the category of Rajasika and Tamasika Aharas and lead to vitiation of Manasika Doshas leading to stress related pathologies. Virudha Ahara behaves as Visha and causes gradual Ojakshaya. In Ojakshaya, the person will suffer from physical and mental problems. Ojakshaya aggravates stress responses as it brings down the normal activity of Indriyas. Usage of Madakari Dravyas also aggravates stress responses as most of them are Tama Guna dominant. Madakari Dravyas leads to improper functioning of Bodhi. Vidahi Ahara, Vishtambhi Ahara also leads to disturbances in the normal functioning of Agni thereby leading to Ama formation. As said earlier Ama causes inhibition to different systems and finally leading to Balabhramsa and Anilamootatha. Both these factors will aggravate stress responses.

7. Ahita viharas

Apart from Asatmyendriyarthath Samyoga and Vegadharana, other daily regimen also have significant role in the aetiopathogenesis of stress among IT professionals. Ayyayama (lack of exercise) leads to Medodushti (Vitiation of lipid component). Lack of exercise contribute to physical and mental stress as Vyayama is essential for Karmasamrthya (Functional excellence) and Agnideepiti (Normal digestive fire). Eka asana (continuous sitting in the same posture for long time), Vishamastiti (improper positioning of limbs and joints) are the important etiological factors which vitiate Doshas and leads to related physical stress conditions like repetitive stress injury. Working in air conditioned atmosphere will vitiate Vata and Kapha Doshas thereby leading to further pathologies.

8. Ahita Acharas

Acharas when executed properly maintains health and happiness. When Sadvritas are not followed Manasika Doshas will be vitiated leading to stress. Well practiced Sadvritas make a work place a happier location. But sometimes conflict of interests in the tensed and competitive job culture leads to abnormal observations of Sadvritas. According to Charaka, improper Sheela, Cheshita and Achara etc. are related with the pathogenesis of Unmada. Lack of time for other activities, absence of true friendships, unhealthy competitions, professional jealousy, less social contact etc. come under the above frame of Unmada definition and contributes to stress among IT professionals.

DISCUSSION

Causative factors of stress among IT professionals can be systematically categorized under eight domains. Asatmyendriyarthath Samyoga leads to specific Doshita vitiation through improper contact between Indriya and related objects. Janendriya, Karmanendriya and Mana all are affected here. Vatakopa is the main factor to be considered here because Vata controls Mana and Mana is related with Indriyas. Prajnnaparadha is quite common due to compromises in Dhee, Dhriti and Smriti due to high pressure job culture among IT professionals. Prajnnaparadha causes Sarvadoshapraakaopa leading to physical and mental stress. Parinama is the time factor associated with once own improper activities. Vegadharana especially Nidra Vegadharanaan and Kshut Vegadharana are relevant among IT professionals. Here also Vata dominant Sampraptis are initiated leading to stress responses. There are certain behavioral restrictions described for maintaining better inter personal relationships. Control over certain emotional factors is mentioned as Dharaneeya Vegas in Ayurveda. Lack of control over Dharaneeya Vegas like anger, jealous, ego etc leads to stress. Nature of food and food culture also influences stress pathology. Certain food items and food culture lead to abnormal physiological reactions in the digestive system and nervous system thereby aggravating stress. Ahita Viharas like lack of exercise, continuous sitting without a break etc also initiate negative events in the body and mind. Continuous practice of Ahita Acharas lead to Unmada related Sampraptis in the individuals which are similar to common stress related mental conditions.

CONCLUSION

Better understood problems can be better solved. Understanding and unveiling Nidanas behind the Samprapti of stress opens new paths of solutions in stress management. According to Ayurveda stress can be defined as any Nija or Agantu factor making either a Satmya or Asatmya type of response in biological factors like Tridoshas, Manasika Doshas, Dhatus, Malas and Srotases and may lead to various Sareereka or Manasika problems. Computer related, Work related and personal factors behave as important Nidanas in the Samprapti of Stress among IT professionals. Scientifically these Nidanas can be comfortably placed under following classical domains. Asatmyendriyarthath Samyoga, Prajnnaparadha, Parinama, Suppression of Adharaneeya Vegas, practice of Adharaneeya Vegas, Ahita Acharas, Ahita Viharas and Ahita Acharas are the common causative domains of stress among IT professionals. A more scientific stress prevention and management can be formulated by addressing the above mentioned Nidanas because avoiding of Nidanas itself is the treatment.

Available online at: [http://ijapr.in](http://ijapr.in)
REFERENCES


Cite this article as:

Source of support: Nil, Conflict of interest: None Declared

*Address for correspondence
Dr.S.Gopakumar
Associate Professor, Dept of Roganidana, Govt Ayurveda College, Thiruvananthapuram-695001, Kerala, India.
Mob: 9447361304
Email: drgopakumar73@yahoo.com