

## **A CLINICAL STUDY ON THE EFFECT OF SHEETALI PRANAYAMA IN OCCUPATIONAL STRESS**

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### **ABSTRACT**

Stress is a non specific response of the body to any demand placed up on it. A healthy working environment is one in which there is not only an absence of harmful conditions that can cause injury and illness, but an abundance of health promoting ones.<sup>[1]</sup> When a person feels insufficient in dealing with demands and challenges faces in life, he or she will experience stress. Incidence of stress is increasing day by day due to the present lifestyles. Employees especially professionals are subjected to continuous physical and mental stress. Occupational stress occurs when there is discrepancy between demand of work place environment and individuals ability to carryout or complete the demand. It is expressed as dissatisfaction, fatigue, tension, headache,

agitation, insomnia etc. The continuous exposure and improper management may lead to severe psychiatric or psycho somatic diseases. A survey on workers shown that 40% of them are extremely stressful with their job, 25% view it as number one stressor in their life. Research in the field of work and family has well established the spillover and cross over effects effecting co-workers spouse, children and the community at large. Pranayama is a yogic breathing technique which is known to improve the physical and mental well being. The benefits of Sheetal Pranayama in Gheranda samhita explains similar effects, in addition it also helps to cool down the body and mind.<sup>[2]</sup>

**KEYWORDS:** Stress, Occupational stress, *Sheetali Pranayama*.

### **OBJECTIVE OF THE STUDY**

To study the efficacy of *Sheetali pranayama* in Occupational stress.

**METHOD OF COLLECTION OF DATA**

A clinical study with 30 subjects full filling the diagnostic and inclusion criteria was selected irrespective of sex, religion and socio-economic status.

**SAMPLE SOURCE**

Patients was selected from OPD and IPD of Alva's Ayurveda Medical College and special medical camps in and around Moodbidri.

**DIAGNOSTIC CRITERIA**

Based on ISMA stress Questionnaire.<sup>[3]</sup>

**ASSESSMENT CRITERIA**

Based on Work Place Stress Scale.<sup>[4]</sup>

**HYPOTHESIS**

H0 - There is no significant effect of Sheetal Pranayama in Occupational Stress.

H1 - There is significant effect of Sheetal Pranayama in Occupational Stress.

**INCLUSION CRITERIA**

Subjects of either sex.

Subjects between 26-65 years.

Subjects who scores 5 or more than in ISMA Stress questionnaire.

**EXCLUSION CRITERIA**

Subject suffering from other psychiatric illness.

Subjects suffering from any medical conditions.

Subjects suffering from complication of substance abuses.

Subjects suffering from low blood pressure and respiratory disorders.

Pregnant women.

**STUDY DURATION**

Total duration : 45 days

Treatment duration : 30 days

Follow up : 45<sup>th</sup> day

Assessment : 0<sup>th</sup> day, 30<sup>th</sup> day and 45<sup>th</sup> day.

**STEPS TO PERFORM SHEETALI PRANAYAMA****POORVA KARMA**

- Sit in any comfortable meditative position like Padmasana, Swastikasana etc with relaxed body and erect spine.
- Eyes should be closed gently.

**PRADHANA KARMA**

- The hands were to be kept on the knees in Gnyan mudra.
- Keep the head level and open the mouth.
- Push out the tongue and curl it lengthwise like a tube or straw.
- Stretch the curled tongue further out and take a long deep inhalation through the curled tongue.
- The breath is moistened by passing through the curl of wet tongue.
- After a full in breath, withdraw the tongue and close the mouth.
- Hold the breath for 5 to 10 seconds.
- Then slowly exhale through both nostrils.
- This completes one cycle of Sheetal pranayama.
- Repeat this for 20 rounds at a stretch. At the end of last cycle, inhale normally through both nostrils.

**PASCHAT KARMA**

- By taking deep inhalation and exhalation, relax the body and mind.

**OBSERVATIONS****DISTRIBUTION OF SUBJECTS ACCORDING TO GENDER**

Among 30 subjects, 40% were males and 60% were females.

**DISTRIBUTION OF SUBJECTS ACCORDING TO AGE**

Among 30 subjects, 46% comes between the age group 26-30yrs. 33.3% comes between the age group 31-35 and 20% comes between the age group 36-40yrs.

**DISTRIBUTION OF SUBJECTS ACCORDING TO RELIGION**

Among 30 patients, 22 were Hindus(73.3%), 5 were Christians(16.6%) and 3 of them were Muslims (10%).

**DISTRIBUTION OF SUBJECTS BASED ON OCCUPATION**

Among 30 patients, 11 were teachers (36.6), 9 were engineers (30%), 4 were IT professionals (13.3%), 3 were bank employees (10%), 2 were doctors (6.6%) and 1 accountant (3.3%).

**DISTRIBUTION BASED ON WORKING DAYS/WEEK**

Among 30 patients, 28 subjects were having work 6 days/week (93.3%) and 2 subjects were having work 5 days/week (6.6%).

**DISTRIBUTION BASED ON WORKING HOURS/DAY**

Among 30 subjects, 26 subjects were having working hours from 7-10 per day(86.6%) and 4 subjects were having 10-12 hours of work per day (13.3%).

**DISTRIBUTION OF SUBJECTS BASED ON SOCIAL STATUS**

Among 30 patients, 90% belongs to middle class and 10% belongs to Upper middle class.

**DISTRIBUTION OF SUBJECTS BASED ON MARITAL STATUS**

Among 30 subjects, 70% were married and 30% were unmarried.

**DISTRIBUTION OF SUBJECTS BASED ON DOMICILE**

Among 30 subjects, all of them are from rural area.

**DISTRIBUTION OF SUBJECTS ACCORDING TO APPETITE**

Among 30 subjects, 53.3% subjects are having reduced appetite, 30% are having moderate appetite and 16.6% are having good appetite.

**DISTRIBUTION OF SUBJECTS BASED ON DIET**

Among 30 subjects, 73.3% subjects are following mixed diet and 26.6% are following vegetarian food.

**DISTRIBUTION OF PATIENTS BASED ON SLEEP PATTERN**

Among 30 patients, 56.6% subjects are having disturbed sleep, 26.6% subjects are having less sleep and 16.6% subjects are having low sleep.

**DISTRIBUTION OF SUBJECTS BASED ON *PRAKRATI***

Among 30 patients, 60% subjects are *Vata pitta prakriti*, 33.3% subjects are *Pitta kapha prakriti* and 6.6% subjects are *Vata kapha prakriti*.

**DISTRIBUTION OF SUBJECTS BASED ON AGNI**

Among 30 patients, 23.3% subjects are having *Sama agni*, 26.6% subjects are having *Manda agni*, 16.6% subjects are having *Tikshna agni* and 33.3% are having *Vishama agni*.

**DISTRIBUTION OF SUBJECTS BASED ON KOSHITA**

Among 30 subjects, 20% subjects are having *Mrudu koshta*, 33.3% subjects are having *Madhyama koshta* and 46% subjects are having *Krura koshta*.

**DISTRIBUTION BASED ON ISMA SRESS SCORE**

Among 30 subjects 10% subjects have scored 7, 30% subjects have scored 8, 26% subjects have scored 9, 10% subjects have scored 10, 13.3% have scored 11, 6.6% subjects have scored 12 and 3.3% subjects have scored 13.

**DISTRIBUTION OF SUBJECTS BASED ON UNPLEASANT CONDITION AT WORK**

Among 30 patients, 6.6% subjects were feeling unpleasant at work rarely, 16.6% subjects felt unpleasant at work sometimes, 43.4% subjects were feeling unpleasant at work often and 33.3% subjects feels it very often.

**DISTRIBUTION OF SUBJECTS BASED ON NEGATIVE IMPACT OF JOB ON PHYSICAL/EMOTIONAL WELL BEING**

Among 30 patients, 3.3% subjects (rarely), 6.6% subjects(sometimes), 30% subjects(often) and 60% subjects(very often) are feeling that job is negatively affecting their physical/emotional well being.

**DISTRIBUTION OF SUBJECTS FACING ON UNREASONABLE DEADLINES**

Among 30 subjects, 20% subjects (rarely), 16.6% subjects (sometimes), 20% subjects (often) and 43.3% subjects(very often) are finding difficult with unreasonable deadlines.

**DISTRIBUTION OF SUBJECTS BASED ON DIFFICULTY IN EXPRESSING OPINIONS**

Among 30 patients, 3.3% subjects (rarely), 16.6% subjects(sometimes), 46.6% subjects (often) and 33.3% subjects (very often) are feeling difficulty in expressing opinions.

### DISTRIBUTION OF SUBJECTS BASED ON JOB INTERFERENCE WITH PERSONAL LIFE

Among 30 patients, 13.3% subjects (sometimes), 33.3% subjects (often) and 53.3% subjects (very often) are feeling that job is negatively interfering with their personal life.

### DISTRIBUTION OF SUBJECTS BASED ON CONTROL OVER WORK DUTIES

Among 30 subjects, 53.3% subjects never had any control over work duties, 43.3% subjects rarely had, 3.3% subjects sometimes use to get control over work duties.

### DISTRIBUTION OF SUBJECTS BASED ON RECOGNITION FOR GOOD PERFORMANCE

Among 30 subjects, 53.3% subjects never use to receive any recognition for good performance, 43.3% subjects rarely use to receive recognition and 3.3% subjects use to get recognition often.

### DISTRIBUTION OF SUBJECTS BASED ON THEIR UTILIZATION OF SKILLS TO FULLEST EXTENT AT WORK

Among 30 subjects, 46.6% subjects never use to utilize their skills to the fullest extent and 53.3% subjects rarely use to utilize their skills to the fullest extent at work.

## RESULT

### 1 Effect of Sheetal Pranayama on Unpleasant Working Condition

Criteria	Mean Score				%
	BT			BT-AT	
Unpleasant working conditions	4.1	AT	2.4	1.7	41.4%
		AF	2.6	1.5	36.5%

### 2 Effect of Sheetal Pranayama on Feeling Job Negatively Affecting Physical/Emotional Well Being

Criteria	Mean Score				%
	BT			BT-AT	
Job negatively affecting physical well being	4.4	AT	2.6	1.8	40.9%
		AF	2.7	1.7	38.6%

### 3 Effect of Sheetal Pranayama on Feeling Difficulty In Unreasonable Deadlines

Criteria	Mean Score				%
	BT			BT-AT	
Unreasonable deadlines	3.9	AT	2.6	1.3	33.3%
		AF	2.7	1.2	30.7%

**4 Effect of Sheetal Pranayama on Feeling Difficulty in Expressing Opinions**

Criteria	Mean Score				%
	BT			BT-AT	
Difficulty in expressing opinions.	4.1	AT	2.2	1.9	46%
		AF	2.5	1.6	39%

**5 Effect of Sheetal Pranayama on Feeling Job Pressure Interfering With Personal Life**

Criteria	Mean Score				%
	BT			BT-AT	
Job pressure interfering with personal life	4.4	AT	2.6	1.8	40.9%
		AF	2.7	1.7	38.6%

**6 Effect of Sheetal Pranayama on Control Over Work Duties**

Criteria	Mean Score				%
	BT			AT-BT	
Control over work duties	1.5	AT	3.1	1.6	51.6%
		AF	2.9	1.4	45.1%

**7 Effect of Sheetal Pranayama on Receiving Recognition For Good Performance**

Criteria	Mean Score				%
	BT			AT-BT	
Receiving recognition for good performance	1.5	AT	2.7	1.2	44.4%
		AF	2.5	1	37.03%

**8 Effect of Sheetal Pranayama on The Ability To Utilize The Talents To Fullest Extent**

Criteria	Mean Score				%
	BT			AT-BT	
Utilizing talents to fullest extent	1.5	AT	3.2	1.7	53.12%
		AF	2.8	1.3	40.62%

**DISCUSSION****DISCUSSION ON OBSERVATION****Gender**

Among 30 subjects, 40% were males and 60% were females. More number of females were enrolled in the study because women are more exposed to stress factors as they have to carry out more roles day to day.

**Age**

Age group of 26-35 (40%) were maximum in the study, suggesting work stress is more this age as it is a stage where people will be striving job security and financial balance.

**Religion**

Among 30 patients, 22 were Hindus(73.3%), 5 were Christians(16.6%) and 3 of them were Muslims (10%). Maximum number of subjects were Hindus as the study was conducted in the Hindu predominant area.

**Occupation**

Among 30 patients, 11 were teachers (36.6), 9 were engineers (30%), 4 were IT professionals (13.3%), 3 were bank employees (10%), 2 were doctors (6.6%) and 1 accountant (3.3%). In this study teachers were facing more stress as they were adapting online classes due to Covid. Teachers are confronted with many challenges in virtual classes such as online evaluation and creating digital content for students, lack of technological knowledge etc. Most of the school teachers were doing both online and offline for knowledge imparting and character building of students in the post COVID period.

**Social status**

Among 30 patients, 90% belongs to middle class and 10% belongs to Upper middle class. Maximum number of subjects were from middle class because they had unbearable deadlines and insufficient time in a day to reach the targets.

**Marital status**

Among 30 subjects, 70% were married and 30% were unmarried. In this study maximum number of subjects were married. This is because the married individuals have to deal with both family and work related circumstances.

**Domicile**

All of the subjects are from rural area. This is because the study was conducted in rural area.

**Appetite**

Among 30 subjects, 53.3% subjects are having reduced appetite, 30% are having moderate appetite and 16.6% are having good appetite. In this study maximum number of subjects are having reduced appetite. Stress commonly causes a change in appetite. Some people with stress tend to over eat or consume a lot of unhealthy foods. Others, however, lose their desire to eat when they feel stressed. When someone feel stressed, their body will release stress hormones. These hormones activate the sympathetic nervous system and trigger the body's fight-or-flight response. The fight-or-flight response is an instinctive reaction that attempts to



keep people safe from potential threats. It physically prepares the body to either stay and fight a threat or run away to safety. This sudden surge of stress hormones has several physical effects. Corticotrophin-releasing factor (CRF) affects the digestive system and may lead to the suppression of appetite. Another hormone, cortisol, increases gastric acid secretion to speed the digestion of food so that the person can fight more efficiently. On the other hand, people who experience stress less frequently may be more likely to seek comfort from food and overeat. However, everyone reacts differently to stress, whether it is short-term or chronic. In fact, the same person may react differently to mild stress and severe stress. Mild stress may cause a person to over eat. If that person experiences severe stress, may lose their appetite. Another person may respond in the opposite manner.

### Diet

Among 30 subjects, 73.3% subjects were following mixed diet and 26.6% were following vegetarian food. Maximum number of subjects were having mixed food habits as the study was conducted in coastal region where food habits of people are mostly fish and other seafoods, chicken and vegetables.

### Sleep pattern

Among 30 patients, 56.6% subjects are having disturbed sleep, 26.6% subjects are having less sleep and 16.6% subjects are having low sleep. In my study, more number of subjects are having disturbed sleep due to work schedules, excessive thinking about work problems even when they are suppose to be relaxing.

### Prakriti

Among 30 patients, 60% subjects are *Vata pitta prakriti*, 33.3% subjects are *Pitta kapha prakriti* and 6.6% subjects are *Vata kapha prakriti*. Maximum number of subjects belongs to *Vata pitta prakriti*. As *vata* and *pitta* are predominant in the genesis of *rajas* which in turn leads to stress. People belonging to this *prakriti* will have features like lack of courage, unstable mind and short memories.

### Agni

Among 30 patients, 23.3% subjects are having *Sama agni*, 26.6% subjects are having *Manda agni*, 16.6% subjects are having *Tikshna agni* and 33.3% are having *Vishama agni*.

**Koshta**

Among 30 subjects, 20% subjects are having *Mrudu koshta*, 33.3% subjects are having *Madhyama koshta* and 46% subjects are having *Krura koshta*.

**DISCUSSION ON CRITERIAS****Unpleasant condition at work**

This is mainly because of poor management, unfair treatment, unclear job rules, inadequate training, poor communication, lack of equal opportunities etc. Work related problems can affect the physical, emotional and mental health.

Whenever there is unpleasant working atmosphere, the person becomes psychologically upset, which can be considered as a psychological stimuli that disrupts the homeostasis resulting in a stress response.

**Negative impact of job on physical or mental wellbeing**

This is mainly because of poor job security which made them more anxious about the future and also toxic colleagues and their attitude towards work also caused a negative impact on physical and mental wellbeing.

The people with a negative impact on their mental health are more vulnerable to stress. The cortisol level rises in this situation and body's metabolism will be reduced because all of the body's energy goes in to handling the stressor instead of regulating other bodily functions.

**Unreasonable deadlines**

This causes the subjects to worry about reprisals from the management if they do not complete the tasks on time and often leads to overtime work and leads to stress. Deadlines will force the subjects to focus on finishing the task rather than coming up with creative ideas. Continuously chasing deadlines can make us emotionally exhausted. Hence there will be no motivation to be creative.

**Difficulty in expressing opinion**

Employees withhold opinion because they think it will not be heard or fear it may backfire by embarrassing their superiors or damaging their own reputations. Some employees think that their opinion doesn't matter and the superiors will not listen to them.

When a person is unable to communicate his own opinions, he becomes emotionally distressed which can be viewed as a psychological stimulus that breaks the homeostasis, triggering a stress response.

### **Job interference with personal life**

Working long hours is associated with more work interference at home. Several job related demands predict more work seeping into the home life. Inter personal conflict at work, job insecurity, noxious environments and high pressure situations also causes job interference with personal life.

It is common for people who work long shifts and travel a lot for work to feel stressed. However a person's professional productivity is not the only thing affected by work stress. It has adverse effects on their personal life also. When a person is not able to sustain healthy and happy relationships with the people around him, it is bound to affect his mental health as well.

When a person feel over worked, stressed and lack the energy and motivation to do anything else after work, it becomes difficult to have the energy to connect with the family. As a result, one may not put the same amount of effort once used and this creates emotional distance between the person and his family. This results in more stress due to lack of family support.

### **Control over work duties**

The common reason that lead to poor control over duties related with work is due to increased responsibilities at work. Uncontrolled work duties can lead to poor work performance. Jobs with high demands can be stressfull especially when the individual has low control over the job. This means that control serves as a buffer when demands or work load is high. So whenever the person is not having proper control over work duties it leads to stress response.

### **Receiving recognition for good performance**

When you are not feeling valued as a person or for what you are doing you can't help but become dissatisfied with the work. You lose meaning in your work and become disengaged.

Disengaged employees tend to slow down and perform any routine work and don't go above and beyond. Employees reward and recognition has been proven to improve organizational

values, enhance team effort, increase customer satisfaction and motivates certain behaviors amongst members of staff.

When a person has put so much efforts in his work and not receiving any recognition for his good performance, it will ultimately leads to stress response.

### **Ability to utilize talents to the fullest extent**

Talent is mainly personality in the right place, which explains why most people will do better in some jobs and contexts than in others. Another reason is lack of enthusiasm and motivation found at work place. One of the most common drivers of disengagement is poor leadership. Management malfunction also leads to lack of performance at work which further causes talented employees to quit their job. Personal circumstances is another reason for poor utilization of talents. In today's ever-more-absorbing and 24/7 world of work, it's easy to forget that people also have a personal and private life, and that no matter how engaged and talented they are, personal drawbacks and setbacks will often interfere with their career success. Good bosses and supportive employers will want to understand the person's circumstances, and one can be sure that they will have a vested interest in helping the person deal with them so one can deliver in accordance with their talents.

Work place stress derives from many sources. It can be a demanding boss, annoying co workers, rebellious students, angry customers and never ending work load. Work performance is also affected by stressors such as family relationships, finances and anxieties about the future. An overwhelming workload, lack of peer support and too many demands at once, contribute, contribute to a sense of frustration that there isn't enough time to complete the work.

Stress affects the ability to remember the things, to process new information and to apply both to certain situations and physical tasks that require concentration. When a person is mentally exhausted from all of the worries, anxieties and tension brought on by a stressful atmosphere or lifestyle, he becomes more easily distracted and prone to make harmful, costly or even fatal mistakes on the job.

### **CONCLUSION**

In this study there is significant effect of *Sheetali pranayama* in occupational stress based on the subjective criterias. The study was conducted for 30 days and then a follow up on 45<sup>th</sup>

day. There was significant improvement in the subjects after the completion of 30 days of practicing *pranayama* but during the follow up on the 45<sup>th</sup> day, it was observed that there was a reoccurrence of some of the symptoms in the criterias taken for the study. Thus it can be inferred that *Pranayama* should be practiced as a part of *Dinacharya* by considering the *Ritu*, contra indications and the condition of the individual. Hence the treatment modality is found effective in managing occupational stress as per the result and discussion and so Null hypothesis  $H_0$  is rejected and the alternative hypothesis  $H_1$  is accepted that is, there is significant effect of *Sheetali Pranayama* in Occupational stress.

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