

## An investigation report on how work stress affects Indian tile workers

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### Abstract

*Stress is a part of everyday life; we experience it to one degree or another. Although it's an unavoidable part of our activities at work and at home, stress becomes harmful when it reaches intensity that impairs daily activities. Stress is really the body's reaction to what are called stressors. Under stress the body 'gears up' and response to situations to protect itself. Once the cause is removed the body returns to its normal situation. The focus of this study is to find out and compare the impact of work stress among tile factory workers, at gender level in Trichur district in Kerala. The research design undertaken for the study was descriptive research and convenience sampling method is used. The data were collected from 100 workers, 50 male workers and 50 female workers selected from 5 tile factories in Trichur District. Henry Garrett ranking method and Mann – Whitney test was used to analyze the data collected and the results of the study.*

**Keywords:** Stress, stressors, impact and consequences.

### I. INTRODUCTION

Stress is an emotional and physical reaction to change. Day to day life is full of stress – both on the personal and professional fronts. Stress is associated with constraints and demands. The former prevents an individual from doing what he or she desires. The latter refers to the loss of something desired. Both constraints and demands can lead to potential stress. Potential stress becomes actual stress, if it is coupled with uncertainty of the outcome and importance of the outcome. Stress is highly individualistic in nature. Some people have high tolerance for stress and thrive well in face of several stressors in the environment. On the other hand, some have very low level of tolerance for stress and they become paralyzed when exposed to stressors. Stress becomes a problem when body is constantly under pressure, and does not return, to normal. At this stage, the brain and its coordinating assistance are overwhelmed and worn out. As a result of that the stressed people are constantly in what scientists call a state of arousal or alertness. This can lead to long term physical, psychological or behavioral problems like anger, anxiety, alcoholism, asthma, depression, headaches, stomach problems, sleep disturbances, skin rashes, teeth grinding etc.

### II. LITERATURE REVIEW

Johnson et.al, (2005) have carried out the study on the experience of work-related stress across occupations. They have discussed three stress related variables like psychological well-being, physical health and job satisfaction and these variables are compared between 26 different occupations. The occupations like ambulance workers, teachers, social services, customer services - call centers, prison officers and police. The study reveals the high emotional labour associated with the high stress jobs is discussed as a potential causal factor. Bhattacharya and Guha (2006) conducted a study on stress and coping. A group of 34 lady criminal lawyers were selected for the study. The significant factors found to generate stress were busy schedule of work, odd duty hours, poor interaction, leading tendency of superiors and poor interpersonal relationship among the colleagues in the work environment. According to Pawar et.al. (2007) measured occupational stress and life satisfaction in 413 naval personnel serving afloat and ashore. The result shows that naval personnel serving on board submarine and ship had lower levels of occupational stress as compared to those serving on shore establishments. Occupational stress scores were higher among junior sailors (36.7%) as compared to officers and senior sailors (20%). Life satisfaction scores were lower in junior sailors. Greater occupational stress was linked to lower life satisfaction. The finding of high occupational stress in junior sailors needs to be investigated further with a larger sample. Judith (2008) in her research on workplace bullying found that 75% of participants reported witnessing mistreatment of co-workers throughout their careers, 47% had been bullied during their career and 27% admitted that they were being bullied for the last 12 months. Kayoko Urakawa and Kazuhito Yokoyama 11 in their journal "Sense of

Coherence (SOC) may Reduce the Effects of Occupational Stress on Mental Health Status among Japanese Factory Workers" (2009) has resulted the adverse effects on mental health due to the job demand and job stress was positively associated with SOC (sense of coherence), the mental health status of males in managerial work was adversely negative, where as it was positive among the female co-workers. Thus, SOC is an important factor determining the coping ability over the job stress for both the genders. Chiang *et al.* (2010) found in his study on work stress of hotel and catering industry employees that job demands, job control and work-life balance significantly affected job stress in such a way that high job demands when combined with low job control and minimal work-life balance practices contributed to higher level of work stress. Kumar (2011) studies found that job stress is the major cause for job dissatisfaction, which creates disturbances in quality of life, so it results unhappiness. Ramezan Jahanian, Seyyed Mohammad Tabatabaei and Behnaz Behdad (2012) observed that stress is a fact in our daily life. When a person needs

help, it means the person feels physically and emotionally disabled. Most people believe that their capacity and capabilities are so little to encounter high level of stress. Today, with progress in all respects, human is facing new challenges in many different fields as if progress in turn creates new problems. Over a century, the nature of working has changed widely, and still these changes are in progress. Following these changes, number of illnesses has increased, morality and human aspects have faded

and new problems occur every day. CFO daily news June 26 (2013) reports that according to the recent study by financial finesse 83% of employees are under financial stress. The detailed breakdown of the type of stress workers are under: 67% of workers reported “some” financial stress, 13% said that they have “high” financial stress and 3% said their financial stress was “overwhelming”.

### **Impact / Consequences of Work Stress**

The impact / consequences of stress have been found to be fairly widespread, implicating changes in behavior, mood, capacity to perform mental tasks and neuropsychological functioning. Psychological stimuli operate on persons each of whom is equipped with an individual psychological programme for relating to any type of internal or external stimuli. These programmes are propensities conditioned by a vast array of genetic and earlier environmental influences. When the environment fails to meet personal demands or be its wake a host of pathogenic mechanisms which may be cognitive, emotional behavioral, and / or physiological.

The following are some of the consequences of work stress experienced by tile factory workers.

**Physical consequences:** Headache, Tightness in neck, backache, Facial or jaw pain, Stomach disorder, swollen joints, High blood pressure, Skin disorder.

**Psychological Consequences:** Irritability, Moodiness, Anxiety, Anger, Withdrawal from other people, Feelings of insecurity, Loneliness, Helplessness.

**Behavioral / Emotional Consequences:** Increased smoking, Gnashing or grinding teeth, Nail biting, Hair pulling, wrinkling forehead, Carelessness, Increased alcohol / drug consumption, Sudden changes in social habits.

## **III. RESEARCH METHODOLOGY**

Research methodology is a way to systematically solve the research problems. It may be understood as a science of studying how research is done scientifically. It includes the overall research design, the sampling procedure, data collection method and analysis procedure. In this study, Descriptive research was adopted. Descriptive research study includes surveys and fact-finding enquiries of different kinds, which help the researchers to describe the present situation.

### **Sampling Design**

Sampling design is to clearly define a set of objects, technically called the universe to be studied. A sampling design is a definite plan for obtaining a sample from the given population.

### **Sample Size & Sampling Method**

The sample size consists of 100 respondents, 50 male workers and 50 female workers selected from 5 tile factories in Trichur District. Convenience sampling method under Non-Probability sampling was employed in selecting the sample. In order to ensure greater clarity and validity pre-testing was done with limited number of respondents and necessary modifications were made in the interview schedule. With the

objectives in mind the researcher collected first hand information about the universe through pilot study. The pilot study helped the researcher to narrow down the scope of the study and facilitated the selection of samples.

## **1. DATA COLLECTION METHODS**

The present study covers both primary as well as secondary data.

### **A) PRIMARY DATA**

For the study, both primary as well as secondary information were collected. Interview schedule method was used to collect the primary data. To collect information in deepest level, observation and guidance methods also were employed.

### **B) SECONDARY DATA**

Secondary data were collected from organizations' records, documents, website, company's annual reports, muster roll, brochure, Journals etc

## **2. STATISTICAL TOOLS USED FOR ANALYSIS**

Data collected through Research Schedule were presented in a master table. From the master table sub tables were prepared. In order to do analysis and interpretation of the data simple statistical tools like Henry Garrett Ranking method and Mann – Whitney test are used. Analysis was done using PAST 2.17 software of University of Oslo. The following formula can be used for calculating the Henry Garrett

Ranking Method.

Henry Garrett Ranking Method =  $\frac{100(R_{ij}-0.5)}{N_j}$

$N_j$

Where,  $R_{ij}$  is Rank given for  $i$ th item  $j$ th individual  $N_j$  is  
 Number of items ranked by  $j$ th individual

**Table 1** Impact of Work Stress among Tile Factory workers in Trichur District in Kerala – Sample size -Male – 50

	<b>Ranks Scale  Factors</b>		<b>I 81</b>	<b>II 70</b>	<b>III 63</b>	<b>IV 57</b>	<b>V 52</b>	<b>VI 47</b>	<b>VII 42</b>	<b>VIII 36</b>	<b>IX 29</b>	<b>X 18</b>	<b>Total</b>	<b>Total Score</b>	<b>Mean Score</b>	<b>Rank</b>
1	Difficulty in thinking logically	f	3	2	5	4	3	6	3	7	8	9	50	2136	42.72	10
		fx	243	140	315	228	156	282	126	252	232	162				
2	Experience Headache, Increased Blood pressure	f	7	5	4	6	7	3	8	3	4	3	50	2630	52.6	1
		fx	567	350	252	342	364	141	336	108	116	54				
3	Increased Absenteeism	f	4	6	2	3	5	3	7	5	8	7	50	2274	45.48	9
		fx	324	420	126	171	260	141	294	180	232	126				
4	Unable to relax, sleep and concentrate	f	8	4	5	7	2	6	5	3	6	4	50	2592	51.84	3
		fx	648	280	315	399	104	282	210	108	174	72				
5	Increasingly distressed and irritable	f	9	4	6	3	4	2	8	7	2	5	50	2596	51.92	2
		fx	729	280	378	171	208	94	336	252	58	90				
6	Experience low back pain, Joint & neck pain	f	5	8	3	5	4	7	4	6	3	5	50	2537	50.74	5
		fx	405	560	189	285	208	329	168	216	87	90				
7	Moodiness / withdrawal from other people	f	2	5	7	6	8	4	3	7	2	6	50	2443	48.86	8
		fx	162	350	441	342	416	188	126	252	58	108				
8	Feel tired, depressed and anxious	f	3	6	4	8	7	6	5	4	5	2	50	2552	51.04	4
		fx	243	420	252	456	364	282	210	144	145	36				
9	Decreased commitment to Work	f	5	3	8	4	5	6	4	3	8	4	50	2469	49.38	7
		fx	405	210	504	228	260	282	168	108	232	72				
10	Increased smoking / Alcohol consumption	f	4	7	6	4	5	7	3	5	4	5	50	2521	50.42	6
		fx	324	490	378	228	260	329	126	180	116	90				
	<b>Total</b>	<b>Σf</b>	<b>50</b>	<b>50</b>	<b>50</b>	<b>50</b>	<b>50</b>	<b>50</b>	<b>50</b>	<b>50</b>	<b>50</b>	<b>50</b>				

Note: x = Scale value, f = number of respondents, fx = score

**Table 2** Impact of Work Stress among Tile Factory workers in Trichur District in Kerala-Sample size -Female – 50

	<b>Ranks Scale  Factors</b>		<b>I 81</b>	<b>II 70</b>	<b>III 63</b>	<b>IV 57</b>	<b>V 52</b>	<b>VI 47</b>	<b>VII 42</b>	<b>VIII 36</b>	<b>IX 29</b>	<b>X 18</b>	<b>Total</b>	<b>Total Score</b>	<b>Mean Score</b>	<b>Rank</b>
1	Difficulty in thinking logically	f	3	6	4	6	7	5	2	4	8	5	50	2381	47.62	8
		fx	243	420	252	342	364	210	84	144	232	90				
2	Experience Headache, Increased Blood pressure	f	11	4	6	5	3	7	4	3	5	2	50	2776	55.52	1
		fx	891	280	378	285	156	329	168	108	145	36				
3	Increased Absenteeism	f	1	3	8	6	4	2	7	9	4	6	50	2281	45.62	9
		fx	81	210	504	342	208	94	294	324	116	108				
4	Unable to relax, sleep and concentrate	f	4	5	6	4	5	9	4	3	6	4	50	2635	52.7	4
		fx	324	350	378	342	260	423	168	108	174	108				
5	Increasingly distressed and irritable	f	10	6	3	5	2	6	5	4	6	3	50	2672	53.44	3
		fx	810	420	189	285	104	282	210	144	174	54				
6	Experience low back pain, Joint & neck pain	f	8	6	5	4	3	5	4	7	5	3	50	2710	54.2	2
		fx	648	420	315	342	156	210	168	252	145	54				
7	Moodiness / withdrawal from other people	f	3	5	4	6	7	4	8	3	2	8	50	2385	47.7	7
		fx	243	350	252	342	364	188	336	108	58	144				
8	Feel tired, depressed and anxious	f	7	3	5	7	3	7	2	8	3	5	50	2525	50.5	5
		fx	567	210	315	399	156	329	84	288	87	90				
9	Decreased commitment to Work	f	2	7	6	3	9	3	6	5	4	5	50	2448	48.96	6
		fx	162	490	378	171	468	141	252	180	116	90				
10	Increased smoking / Alcohol consumption	f	1	5	3	4	7	2	8	4	7	9	50	2265	45.3	10
		fx	81	350	189	342	364	94	336	144	203	162				
	<b>Total</b>	<b>Σf</b>	<b>50</b>	<b>50</b>	<b>50</b>	<b>50</b>	<b>50</b>	<b>50</b>	<b>50</b>	<b>50</b>	<b>50</b>	<b>50</b>				

Note: x = Scale value, f = number of respondents, fx = score

### Henry Garrett Ranking Method

MANN WHITNEY U TEST		
Factor	Ranking Male	Ranking Female
1	10	8
2	1	1
3	9	9
4	3	4
5	2	3
6	5	2
7	8	7
8	4	5
9	7	6
10	6	10
Males: N = 10 Mean Rank = 5.25		Females: N = 10 Mean Rank = 5.25

**Impact of Work Stress among Tile Factory workers**

Sl. No.	Factors	M A L E			FEM A L E		
		Tot al Sco re	Mea n Sco re	Ran k	Tot al Sco re	Mea n Sco re	Ran k
1	Difficulty in thinking logically	2136	42.72	10	2381	47.62	8
2	Experience Headache, Increased Blood pressure	2630	52.6	1	2776	55.52	1
3	Increased Absenteeism	2274	45.48	9	2281	45.62	9
4	Unable to relax, sleep and concentrate	2592	51.84	3	2635	52.7	4
5	Increasingly distressed and irritable	2596	51.92	2	2672	53.44	3
6	Experience low back pain, Joint & neck pain	2537	50.74	5	2710	54.2	2
7	Moodiness / withdrawal from other people	2443	48.86	8	2385	47.7	7
8	Feel tired, depressed and anxious	2552	51.04	4	2525	50.5	5
9	Decreased commitment to Work	2469	49.38	7	2448	48.96	6
10	Increased smoking / Alcohol consumption	2521	50.42	6	2265	45.3	10

H0: There is no significant difference between the rankings of male and females tile factory workers for the impact of workstress.

H1: There is significant difference between the rankings of male and female tile factory workers for the impact of work stress.

U= 50 and p value at 5% level of significance was found to be 0.9697

As p value is greater than 0.05 at 5% level of significance, we accept the H0.

#### IV. FINDINGS OF THE STUDY

A descriptive study was conducted to assess the impact of work stress among tile factory workers in Trichur district in Kerala. Out of the 100 samples 50 male workers and 50 female workers were selected from 5 tile factories in Trichur district. In the pilot study, factors like difficulty in thinking logically, experience headache, increased blood pressure, increased absenteeism, unable to relax, sleep and concentrate, increasingly distressed and irritable, experience low back pain, joint and neck pain, moodiness / withdrawal from other people, feel tired, depressed and anxious, decreased commitment to work, increased smoking / alcohol consumption etc. have been given in the Interview schedule.

On the basis of the outcome of the pilot study, only factors like difficulty in thinking logically, experience headache, increased blood pressure, increased absenteeism, unable to relax, sleep and concentrate, become increasingly distressed and irritable, experience low back pain, joint and neck pain, moodiness / withdrawal from other people, feel tired, depressed and anxious, decreased commitment to work, increased smoking / alcohol consumption have been used in the final Interview schedule. Male and female respondents were instructed to indicate the importance of the impact of work stress factor by giving rank 1 to the most important factor, rank 2 the second important factor and so on. Based on the ranks assigned by the order of importance is identified. To find the most significant factor Henry Garrett Ranking Technique is employed. It is calculated as percentage score and the scale value is obtained by employing the scale conversion Table given by HenryGarrett.

The Percentage Score is calculated as

Percentage Score =  $\frac{100(R_{ij}-0.5)}{n}$

$N_j$

Where,  $R_{ij}$  is Rank given for  $i$ th item  $j$ th individual  $N_j$  is Number of items ranked by  $j$ th individual

The percentage score for each rank from 1 to 10 are calculated. The percentage score thus obtained for all the ten ranks are converted into scale values using Scale Conversion Table given by Henry Garrett. The scale values for first rank to tenth rank are 81, 70, 63, 57, 52, 47, 42, 36, 29 and 18 respectively. The score value ( $fx$ ) is calculated for each factor by multiplying the number of respondents ( $f$ ) with respective scale values ( $x$ ). The total scores are found by adding the score values ( $fx$ ) of each rank for every factor. The mean score is then calculated to know the order of preference given by the respondents for the factors. Based on the mean score, the overall ranks are assigned for each. The ranking analysis of the factors impact of work stress among workers in tile factories in Trichur district in Kerala Henry Garrett's ranking shown in Table 1 & 2.

**Table 1 (Male workers):** It is clear that male workers have given more importance to the factor that Experience headache, increased blood pressure (52.6) followed by become increasingly distressed and irritable (51.92), unable to relax, sleep and concentrate (51.84), feel tired, depressed and anxious (51.04), experience low back pain, joint and neck pain (50.74), increased smoking / alcohol consumption (50.42), decreased commitment to work (49.38), moodiness / withdrawal from other people (48.86), increased absenteeism (45.48), difficulty in thinking logically (42.72).

**Table 2 (Female workers):** It is clear that female workers have given more importance to the factor experience headache, increased blood pressure (55.52), experience low back pain, joint and neck pain (54.2), become increasingly distressed and irritable (53.44), unable to relax, sleep and concentrate (52.7), feel tired, depressed and anxious (50.5), decreased commitment to work (48.96), moodiness / withdrawal from other people (47.7), difficulty in thinking logically (47.62), increased absenteeism (45.62), increased smoking / alcohol consumption (45.3). Ranking Male and female Mann – Whitney Test (Past 2.17 – (University also) used. Male -  $N = 10$ , Mean Rank = 5.25,  $u = 50$ ,  $p = 0.9697$  and Female  $N = 10$  Mean Rank = 5.25 Accept Null hypothesis. As per the 'p' value  $> 0.05$  at 5 % level of significance Null hypothesis is accepted.

## V. DISCUSSION

The present study is an endeavor to understand the impact and consequences of work stress among tile factory workers in Trichur District in Kerala. A few coping strategies at individual and organizational level are suggested to manage stress in day to day life and to resolve the state of stress by making use of stress management strategies, consciously at appropriate time.

### Measures to be taken by the Workers to Prevent Stress

- Start your day early so that you have fewer people to distract you from your task and you may find that you are productive and less tense.
- Be positive and avoid gossip and complaints. Voicing occasional grievances and annoyances can cause a negative stressful attitude in the workplace.
- Share problems and concerns with friends and people one can trust.
- During the work break try to do the opposite of whatever one does at work. For example if one stands all day sit for a bit.
- Share responsibilities with others and co-workers.
- Leave your work at the workplace.
- Exercise regularly. According to health professionals one should get at least 30 minutes of cardiovascular exercises per day in order to maintain a healthy heart and lungs.
- Eat a balanced diet to keep you active and healthy.
- Keep hydrating – Make it a habit to drink about two liters of water per day.
- Focus on sleeping well to keep the days from being irritable side effects.
- Learn about the relaxation methods available to ease daily tensions.

### Measures to be taken by the Management to Prevent Stress

- Address noise in the workplace. Background noise can impair an employee's ability to concentrate, resulting in reduced performance and can also cause tension, headaches and increased irritability.
- Check for adequate lighting. Poor lighting can cause eye strain and increase fatigue.
- Improve the air quality of the workplace. Poor air quality can damage the ability to concentrate. Lack of ventilation can deplete the amount of oxygen in the air leading to headaches, tiredness and reduced concentration.
- Design the workspace more comfortably so as to improve the health and productivity of the worker.

- Allow the employees to have a say in job related decisions and actions.
- Ensure that workers have job securities and opportunities for career development.
- Define work role very clearly in order to avoid role conflict
- Provide organizational support / social support.
- Adapt working conditions to workers' differing physical and mental aptitudes.
- Design technology, work organization and job content in such a way that the employee is not exposed to physical or mental strain that may lead to illness and accidents.
- Introduce employee assistance programmes: ways of providing counseling services etc. to overcome the stress being faced by the employee.

## **VI. CONCLUSION**

Work stress is a real challenge for workers and their employing organization. For the employers not only it is important to monitor the workplace, identify and deal with stress problems but to promote healthy work and reduce harmful aspects of work. A good employer designs and manages work in a way that avoids common risk factors and prevent as much as possible foreseeable problems. Employers, managers and trade union representatives must therefore become aware of the culture of the organization and explore it in relation to the management of work stress.

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