

A Study of Work Stress and Coping Strategies among Tile Factory Workers in Calicut District in Kerala

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Abstract- Stress is a pressure people feel in life. It cumulates to strain and affect one's physique, psychology and behaviour. Stress harms the workers job performance and health. The aim of this paper is to identify the coping strategies adopted to tackle work stress, by both male and female tile factory workers. The research design undertaken for the study was descriptive research and convenience sampling method was used. The sample size consists of 229 workers, 211 male workers and 18 female workers selected from 3 tile factories in Calicut District in Kerala. Henry Garrett ranking technique and Mann – Whitney U test was used to analyze the data collected and the results of the study.

Index Terms- Stress, coping strategies, tile factory workers

I. INTRODUCTION

Stress can be defined as the way people feel when the pressure they are under exceeds their ability to cope. Stress involves transaction with the environment that is perceived to be threatening. Stress is a common everyday event, and even routine hassles can be problematic. To a large degree stress lies in the eye of the beholder. According to Lazarus and Folks man, primary appraisal determines whether events appear threatening, and secondary appraisal assess whether one has the source to cope with challenges. Stress can prove damaging to people's psychological and physical responses that may be harmful. Controlling stress depends on the coping responses people make to stressful situations. A person's mental and physical health depends, in part, on his or her ability to cope effectively with stress. The term coping refers to attempts to deal with the source of the stress or control reactions to it or both. Coping is defense against the stress inherent in living. People cope with stress in many ways. A number of researchers have attempted to identify and classify the various coping techniques that people use in dealing with stress. In defining the ways of coping, Lazarus & Folksman (1984) identified two broad types of coping strategies, namely, problem-focused coping and emotion-focused coping. Researchers have also proposed that a third group of coping responses can be identified, namely perception-focused coping.

II. STATEMENT OF THE PROBLEM

Although individual and organizational characteristics play a role in the development of work-related stress, the majority will agree that work-related stress results from the interaction between the worker and conditions of work. Increasingly, the

demands on the individual in the workplace reach out into the homes and social lives of workers. Working away from home, job insecurity, downsizing, loss or reductions of benefits etc. are a few of the risk factors that contribute to work stress. The study also highlighted that stress at work is also made worse by inadequate physical working conditions such as dust, excessive heat, air pollution, or cramped working place. Almost all tile factory workers belong to the lower socio-economic group and they live on tight budget and in penury. The study also revealed cases of workers carrying their family problems, worries and anxieties to the work place. Some believe that the existing grievance handling system and other specific employee assistance programmes are inadequate. Subtle discriminations in the work place, family pressures, societal demands, unpaid work at home and paid work at the organization add to their stress factors.

III. REVIEW OF LITERATURE

Sahu and Mishra (1995) made an attempt to explore gender differences in relationship between stresses experienced in various areas of life. The sample consisted of 120 men and 120 women teachers. The result revealed a significant positive relationship between work related stress and society related stress in males. On the other hand, in females, a significant positive relationship was observed between family stress and society related stress. Pandey and Srivastava (2000) studied coping with work stress in career oriented females. It was found from the result that teachers expressed significantly better active coping than bank employees. Chand (2006) studied to examine the psychological factors in the development of work stress. The respondents were 150 junior management scale-1 officers in various banking institutions. The findings of the study revealed that job related strain is positively related with escape coping and negatively related with life event stress, control coping and symptom management coping. Burt et al. (2008) studied the influence of co-worker support and supervisor support on work stress among the workers in a construction industry and found that the presence of the above factors could improve the group cohesion and team safety. The reliability of the questionnaire developed for the analysis was ensured before administration. Agolla, J.E., (2009) in his research article titled "Occupational Stress among Police Officers: The Case of Botswana Police Service", has described a study conducted to find out work stress symptoms and coping strategies among the police service in Botswana. This study reveals that the police work stressors are; getting injured while on duty and the use of force when the job

demands to do so, etc. The coping strategies were identified as exercising, socializing, healthy eating or diets, career planning and employee training. Hess et al (2010) studied the effect of different kinds of lifting tools and handling wooden boards on back and concluded that lifting wooden boards by two people using j-handle reduces the risk of backache and this point indicates that ergonomic designing of load-lifting tools and manual material handling has an important role in reducing musculoskeletal risks especially backache risk. The study by Verbeek (2011) et.al also showed the preventive influence of education on back pains caused by manual material handling. Multi-component intervention such as purchasing elevator and appropriate transportation equipment for the purpose of reducing biomechanical incidents and conducting educational programs towards correct handling of load and right application of the equipment together will decrease musculoskeletal damages significantly.

IV. OBJECTIVES OF THE STUDY

1. To identify the coping strategies adopted to tackle work stress, by both male and female tile factory workers.
2. To suggest better strategies to overcome work stress among tile factory workers.

RESEARCH METHODOLOGY

Descriptive research design has been used. Also called as ex post facto research, this design helps the researcher to report facts and figures as it is.

SAMPLE SIZE & SAMPLING METHOD

The sample size consists of 229 respondents, 211 male workers and 18 female workers selected from 3 tile factories in Calicut District. Convenience sampling method under Non-Probability sampling was employed in selecting the sample.

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 in-depth information 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, various publications of the State planning Board, Factories and boilers inspector office etc.

TOOLS 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 Technique and Mann – Whitney U test are used. Analysis was done using (PAST 3.01 University of Oslo & SPSS 20). The following formula can be used for calculating the Henry Garrett Ranking Technique.

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

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: COPING STRATEGIES AMONG TILE FACTORY WORKERS IN CALICUT DISTRICT IN KERALA — MALE - 211																
	Ranks Scale		I 81	II 70	III 63	IV 57	V 52	VI 47	VII 42	VIII 36	IX 29	X 18	Total	Total Score	Mean Score	Rank
	Factors															
1.	Repetitive prayer	f fx	18 1458	20 1400	17 1071	19 1083	22 1144	21 987	20 840	22 792	28 812	24 432	211	10619	50.32	6
2	Listening to music	f fx	17 1377	19 1330	16 1008	20 1140	14 728	25 1175	26 1092	27 972	23 667	24 432	211	9921	47.01	7
3	Yoga & Meditation	f fx	24 1944	22 1540	23 1449	25 1425	21 1092	20 940	15 630	20 720	19 551	22 396	211	10687	50.64	5
4	Jogging	f fx	13 1053	18 1260	20 1260	18 1026	13 676	27 1269	25 1050	24 864	27 783	26 468	211	9709	46.01	8
5	Spending time with family / friends	f fx	29 2349	26 1820	27 1701	24 1368	25 1300	23 1081	19 798	13 468	11 319	14 252	211	11456	54.29	1
6	Sleep & relaxation	f fx	28 2268	24 1680	25 1575	22 1254	26 1352	21 987	18 756	18 648	16 464	13 234	211	11218	53.16	2
7	Outing / Picnic	f fx	15 1215	17 1190	18 1134	16 912	20 1040	17 799	28 1176	25 900	29 841	26 468	211	9675	45.85	9
8	Social support	f fx	26 2106	25 1750	24 1512	28 1596	27 1404	20 940	17 714	11 396	17 493	16 288	211	11199	53.07	3
9	Reading / Gardening	f fx	25 2025	23 1610	26 1690	21 1197	24 1248	22 1034	16 672	21 756	15 435	18 324	211	10991	52.09	4
10	Walking Outdoors	f fx	16 1296	17 1190	15 945	18 1026	19 988	15 705	27 1134	30 1080	26 754	28 504	211	9622	45.60	10
	Total	Σf	211	211	211	211	211	211	211	211	211	211				

Note: x = Scale value; f = Number of Respondents; fx = Score

Table 2: COPING STRATEGIES AMONG TILE FACTORY WORKERS IN CALICUT DISTRICT IN KERALA – FEMALE - 18

	Ranks Scale	I 81	II 70	III 63	IV 57	V 52	VI 47	VII 42	VIII 36	IX 29	X 18	Total	Total Score	Mean Score	Rank	
	Factors															
1.	Repetitive prayer	f fx	3 243	2 140	1 63	2 114	2 105	1 47	1 42	2 72	3 87	1 18	18	930	51.66	4
2	Listening to music	f fx	2 162	1 70	2 126	2 114	1 52	1 47	3 126	2 72	2 58	2 36	18	863	47.94	7
3	Yoga & Meditation	f fx	2 162	2 140	1 63	2 114	1 52	2 94	3 126	1 36	1 29	3 54	18	870	48.33	6
4	Jogging	f fx	1 81	1 70	1 63	2 114	2 104	1 47	2 84	3 108	3 87	2 36	18	694	38.55	10
5	Spending time with family / friends	f fx	3 243	2 140	3 189	1 57	3 156	2 94	1 42	1 36	1 29	1 18	18	1004	55.77	1
6	Sleep & relaxation	f fx	2 162	3 210	2 126	3 171	2 104	2 94	1 42	1 36	1 29	1 18	18	992	55.11	2
7	Outing / Picnic	f fx	1 81	1 70	1 63	2 114	1 52	2 94	2 84	2 72	3 87	3 54	18	771	42.83	9
8	Social support	f fx	2 162	2 140	3 189	2 114	1 52	2 94	1 42	2 72	2 58	1 18	18	941	52.27	3
9	Reading / Gardening	f fx	1 81	2 140	2 126	1 57	2 104	3 141	3 126	2 72	1 29	1 18	18	894	49.66	5
10	Walking Outdoors	f fx	1 81	2 140	2 126	1 57	3 156	2 94	1 42	2 72	1 29	3 54	18	851	47.27	8
	Total	Σf	18	18	18	18	18	18	18	18	18	18				

Note: x = Scale value; f = Number of Respondents; fx = Score

HENRY GARRETT RANKING TECHNIQUE

WORK STRESS AND COPING STRATEGIES AMONG TILE FACTORY WORKERS IN CALICUT DISTRICT IN KERALA							
Sl No.	STRATEGIES	CALICUT DISTRICT Sample size – 211 (Male workers)			CALICUT DISTRICT Sample size – 18 (Female workers)		
		Total score	Mean score	Rank	Total score	Mean score	Rank
1	Repetitive prayer	10619	50.32	6	930	51.66	4
2	Listening to music	9921	47.01	7	863	47.94	7
3	Yoga and Meditation	10687	50.64	5	870	48.33	6
4	Jogging	9709	46.01	8	694	38.55	10
5	Spending time with family / friends	11456	54.29	1	1004	55.77	1
6	Sleep and relaxation	11218	53.16	2	992	55.11	2
7	Outing / picnic	9675	45.85	9	771	42.83	9
8	Social support	11199	53.07	3	941	52.27	3
9	Reading / Gardening	10991	52.09	4	894	49.66	5
10	Walking outdoors	9622	45.6	10	851	47.27	8

Given below is the calculation of Mann-Whitney U Test

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

H₀: There is no significant difference between the rankings of male and female tile factory workers with respect to coping strategies of work stress.

H₁: There is significant difference between the rankings of male and female tile factory workers with respect to coping strategies 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.

V. FINDINGS OF THE STUDY

A descriptive study was conducted on coping strategies among tile factory workers in Calicut district in Kerala. Out of the 229 samples 211 male workers and 18 female workers were selected from 3 tile factories in Calicut district. In the pilot study, factors like Repetitive prayer, listening to music, Yoga & meditation, Jogging, Spending time with family / friends, Sleep and relaxation, Outing / picnic, Social support, Reading / Gardening and walking outdoors have been given in the Interview schedule.

The male and female respondents were instructed to rank the coping strategies adopted to tackle work stress by giving rank 1 to the most important strategy, rank 2 the second strategy and so on. Based on the ranks assigned, the order of importance is identified. To find the most significant strategy, 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 Henry Garrett.

The Percentage Score is calculated as

$$\text{Percentage Score} = \frac{100(\text{Rij}-0.5)}{N_j}$$

Where, Rij is Rank given for ith item jth individual

Nj is Number of items ranked by jth 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 ranks 1 – 10 are: 81, 70, 63, 57, 52, 47, 42, 36, 29 and 18 respectively. The score value (fx) is calculated for each strategy 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 strategy. The mean score is then calculated to know the order of preference given by the respondents to the strategies. Based on the mean score, the overall ranks are assigned for each strategy. The ranking analysis of the factors coping strategies of work stress among workers in tile factories in Calicut district in Kerala are shown in Henry Garrett's ranking, Table 1 & 2.

Table 1 (Male workers): It is clear that male workers are given more importance to the factor that Rank (1) spending time with family / friends (54.29), Rank (2) sleep and relaxation (53.16), Rank (3) social support (53.07), Rank (4) reading / gardening (52.09), Rank (5) yoga and meditation (50.64), Rank (6) repetitive prayer (50.32), Rank (7) listening music (47.01),

Rank (8) jogging (46.01), Rank (9) outing / picnic (45.85), Rank (10) walking outdoors (45.6).

Table 2 (Female workers): It is clear that female workers are given more importance to the factor that Rank (1) spending time with family / friends (55.77), Rank (2) sleep and relaxation (55.11), Rank (3), social support (52.27), Rank (4) repetitive prayer (51.66), Rank (5) reading / gardening (49.66), Rank (6) yoga & meditation (48.33), Rank (7) listening music (47.94), Rank (8) walking outdoors (47.27), Rank (9) outing / picnic (42.83), Rank (10) jogging (38.55).

Ranking male and female Mann – Whitney U Test (Past 3.01 – University of Oslo & SPSS 20) was 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

VI. SUGGESTIONS

Strategies for combating work stress:

The prevention and reduction of stress requires organizational level interventions, because it is the organization that creates the stress. It is important to note stress reduction approaches that concentrate on changing the individual without changing the sources of stress are of limited effectiveness and may be counter productive by masking these sources. An approach that is limited to helping those already experiencing stress is analogous to administering sticking plaster on wounds, rather than dealing with the causes of the damage. The primary aim of the individual approach should be to develop people's skills and confidence to change their situations, not to help them to adapt and accept a stressful situation.

Organizational intervention strategies

- Working conditions are adapted to people's differing physical and mental aptitudes.
- Workers are given the opportunity to participate in the design of his / her own work situation, and in the process of change and development affecting his or her work.
- Closely controlled or restricted work is avoided or limited.
- Work should provide opportunities for variety, social contact and co-operation as well as coherence between different working operations.
- Working conditions should provide opportunities for personal and vocational development as well as for self determination and professional responsibility.
- Technology, work organization and job content are designed so that the employee is not exposed to physical or mental strains that may lead to illness or accidents. Forms of remuneration and the distribution of working hours are taken into account.
- Ensure ergonomic improvements in the workplace.
- Assessing the risk of stress within the workplace must take into account the likelihood and the extent of ill health which could occur as a result of exposure to

particular hazard, the extent to which an individual is exposed to the hazard and the number of workers exposed to the hazard.

Personal intervention strategies

- Discuss concerns and problems with friends and people you trust.
- Exercise regularly and get enough sleep.
- During the work break, try to do the opposite of what you do at work. For example, if you stand all day, sit for a bit.
- Share responsibilities with others.
- Learn about the various relaxation methods available to help you ease your daily tensions. For instance, breathing and stretching exercises help in the relaxation of muscles.
- Think positively. Don't let the negative pull you down.
- Try to spend sufficient time with family and relatives.
- Try to find time to engage in activities like meditation, yoga, jogging etc.
- Learn to deal with criticism.
- Inculcate the habit of 'forgive and forget'.
- Stop smoking and curb alcohol and drugs.

VII. CONCLUSION

Work related stress is a matter of growing concern as it will inevitably have future negative consequences for the health, safety and well-being of the workers and the productivity and cost-effectiveness of the companies they work for. If employers, workers and government department do all they can to minimize

work-related stress and work together towards an improved 'quality of working life', this will not only ensure a healthy and productive workforce, but it will also ensure sustainable economic benefits for the company and the nation as a whole.

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