



Research Article

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Psychological stress among un-organized building construction workers in Gandhinagar, Gujarat, India

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Abstract

Background: Workers who are stressed are more likely to be unhealthy, poorly motivated, less productive and less safe at work. Job stress is believed to be one of the causes of absenteeism, low workers morale, high rate of accident and poor turnover rates. **Aims and Objectives:** To study the socio-demographic aspect of unorganized workers and Psychological stress among them. **Study Design:** Cross-sectional. **Study Setting:** Construction sites in Gandhinagar, Gujarat. **Materials and Methods:** For data collection researchers were used instrument "The Stress Inventory Scale designed and developed by Gerard Hargreaves from the stress Management: The Essential Guide to Thinking and Working Smarter" for the measures of results in the present study., **Statistics:** For continuous variables range, mean and standard deviation will be calculated and for categorical variables proportion and percentage will be obtained. To know the association between dependent and independent variable chi-square or z-test will be applied accordingly. **Results:** Almost 85% participants have high stress and 2% participants have extreme high stress unmarried participants had more significant high stress [48/82, 58.5%, $X^2 = 5.81$, $p < 0.05$] than married participants. Study did not found significant association of stress level with age, sex and literacy level. **Conclusion:** Study found that most of construction worker were suffering from stress. Insomnia, headache and sleeping problems were the result of stress. stress can be reduce by applying the concept of level of prevention through ergonomics, work design, organizational development, workers training & counseling, pre-placement & periodic examination, enhanced occupational health services.

Keywords: Psychological Stress, Job Stress, Unorganized Workers.

INTRODUCTION

Construction industry is one of fastest growing industries of India with annual growth of 10%^[1, 2]. According to report of National Commission for Enterprises in the Unorganized Sector (NCEUS) 2006^[3], in India about 340 million (roughly 92% of total workers) workforce is engaged in unorganized sector of which around half of them are alone from the construction industry.

Stress among construction workers was more in respect of four major factors (too much work- 64.1%, pressure-59.9%, ambitious deadlines-59.7% and conflicting demands- 52.2%)^[4]. Study done in Vadodara^[5], was also found almost 76% construction workers have high level of stress. Study done in Kolkata city^[6] among construction workers was observed psychosocial stress due to long working hours (73.3%), lower wages (60.4%), job uncertainty (56.9%), poor communication among workers with supervisors (22.7%).

Workers who are stressed are more likely to be unhealthy, poorly motivated, less productive and less safe at work^[7]. Job stress is believed to be one of the causes of absenteeism, low workers morale, high rate of accident and poor turnover rates^[8]. It was also observed that Insomnia, nausea and headaches occurs due to psychosocial stresses like job uncertainty, sexual harassment and gender discrimination in women construction workers^[9]. Psychosocial factors like job satisfaction and social support might influence the prevalence of musculoskeletal symptoms like chronic low back pain in construction workers might be due to awkward posture and repetitive nature of work^{[10][11]}. About 17% of the construction workers met with fatal accidents^[12].

Psychological Stress develops among construction workers is due to work load, fixed time frame, lack of training, poor communication among workers as well as with supervisors, inadequate room for innovation, lower wages, ambiguity of job requirement, inadequate knowledge of project objectives, long working hours, tight schedules and unfavorable working conditions etc.^{[13][14]}. Research studies on occupational health especially psychosocial stress in construction industries in India are lacking^[6]. So the study was conducted with objective to study the socio-demographic aspect of unorganized workers and Psychological stress among them.

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MATERIALS AND METHODS

This cross-sectional study was conducted at construction sites in Gandhinagar, Gujarat during July-September 2014. Study conducted among all un-organized construction workers which were working at study setting during study period. Study included construction workers below supervisor level and who gave their consent for participation in the study. After taking permission of institutional ethics committee the study was initiated. Standardized questionnaire of "Stress Inventory Scale" was used to collect the primary data in quantitative nature. Study has also included the additional questions regarding work & working condition of participants. The actual English questionnaire was converted in local language (Gujarati), so participants can understand.

Study Instrument

For data collection researchers have used instrument for the measures of results in the present study. The Stress Inventory Scale was designed and developed by Gerard Hargreaves from the stress Management: The Essential Guide to Thinking and Working Smarter. This scale has situation based questions that are scored from 1 -5. This scale uses scoring method as below: 1 Never, 2 seldom, 3 sometimes, 4 often, 5 nearly all the time. The procedure of interpretation is based on the below cut off score: 15-30: experiencing a little pressure at work but generally feels in control (Low Stress), 31-45: good level of control most of the time. Situations cause stress occasionally (Moderate Stress), 46-60: often feel under pressure and out of control (High Stress), 61-75: high level of pressure and feel out of control (Extreme High Stress).

STATISTICAL ANALYSIS

Statistical Test Data was collected and entered in Microsoft Excel Sheet and analyzed by Epi.info version 7. For continuous variables range, mean and standard deviation has been calculated and for categorical variables proportion and percentage has been obtained. To know the association between dependent and independent variable chi-square has been applied accordingly. P value less than 0.05 will be considered as statistically significant.

RESULTS

Table 1 show that means age of male participants (21.5 years) was less than female participants (24.7 years). Most of participants were belongs to 10 to 25 years age group in both the gender. Almost 68% male and 47% female participants were unmarried. Average experience of present work of participants was 4.02 ± 5.21 years and average duration of present working site of participants was 3.4 ± 4.0 months.

Table 1: Socio-demographic Characteristics of Participants

Variables	Male (%)	Female (%)
Mean age ± SD (95% CI)	21.5 ± 6.3 (20.18 to 23.19)	24.7 ± 8.1 (22.15 to 27.62)
Age distribution (yr)		
➤ 10-25	87.1	76.5
➤ 26-39	9.7	14.7
➤ 40-55	3.2	8.8
Marital status		
➤ Married	32.3	52.9
➤ Unmarried	67.7	47.1
Literacy		
➤ Illiterate	29.0	35.3
➤ Primary	24.2	41.2
➤ Secondary	25.8	5.9
➤ Higher – secondary	21.0	17.6

Figure 1 shows that all participants have moderate to extreme high stress. Almost 85% participants have high stress and 2% participants have extreme high stress.

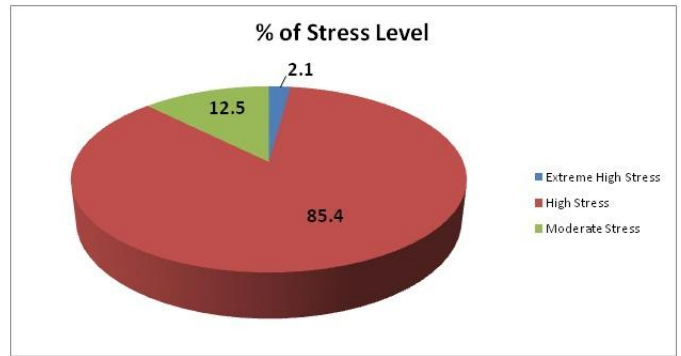


Figure 1: Stress level in participants

Table 2 shows that unmarried participants had more significant high stress [48/82, 58.5%, X² = 5.81, p <0.05] than married participants. Study did not found significant association of stress level with age, sex and literacy level.

Table 2: Association between "Stress Score" with Socio-demographic characteristics of participants

Variables	Stress Score			Chi-square value
	Moderate Stress	High Stress	Extreme High Stress	
Age distribution (yr)				
➤ 10-25	10 (83.3)	68 (82.9)	2 (100.0)	1.45 (p > 0.05)
➤ 26-39	2 (16.7)	9 (11.0)	0 (0.0)	
➤ 40-55	0 (0.0)	5 (6.1)	0 (0.0)	
Sex				
➤ Male	9 (75.0)	51 (62.2)	2 (100.0)	1.87 (p > 0.05)
➤ Female	3 (25.0)	31 (37.8)	0 (0.0)	
Marital status				
➤ Married	2 (16.7)	34 (41.5)	2 (100.0)	5.81 (p < 0.05)
➤ Unmarried	10 (83.3)	48 (58.5)	0 (0.0)	
Literacy				
➤ Illiterate	3 (25.0)	27 (32.9)	0 (0.0)	10.08 (p > 0.05)
➤ Primary	6 (50.0)	21 (25.6)	2 (100.0)	
➤ Secondary	3 (25.0)	15 (18.3)	0 (0.0)	
➤ Higher – secondary	0 (0.0)	19 (23.2)	0 (0.0)	

Figure 2 shows that 48 unmarried and 34 married participants were belong to high stress level group.

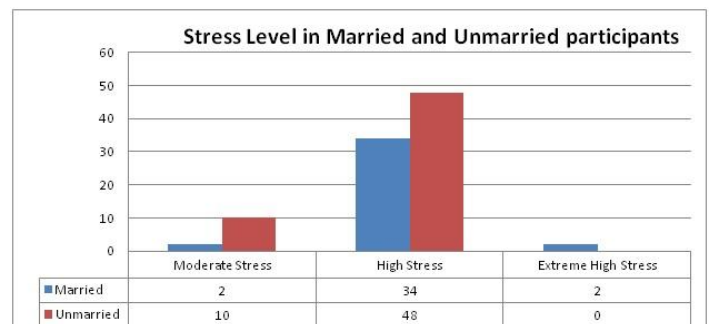


Figure 2: Stress level in married and unmarried participants

Table 3 shows that 58% male and 50% female participants were believed that their job is secure. All the participants were got support from supervisor, co-workers, family and friends in their work.

Table 3: Response of Participants on their work and working condition

S. No.	Questions	Yes (%)	
		Male	Female
1.	Do you fill that your job is secure	58.1	50.0
2.	Do you get support from your supervisor and co-workers in your work?	100.0	100.0
3.	Do you get support from your family and friends in your work?	100.0	100.0
4.	Do you ever fill sleeping problems?	53.2	35.3
5.	Do you ever fill headache problem?	48.4	38.2
6.	Do you ever fill backache problem?	38.7	35.3

DISCUSSION

Work site stress is major challenge for workers and their organization health. Due to stress, Workers are become an unhealthy, poorly motivated, less productive and less safe at work.^[16] Mean age of male and female participants was 21.5 years & 24.7 years respectively which lesser than study done by Desai G et.al 2012^[5] & Kazuhiko Y et.al 2006.^[17]

Study found that 2.1% participants have “extreme high stress” & 85.4% participants have “high stress” which indicates that most of participants have high to extreme high stress. These findings are not consistent with findings of study done in New Delhi^[18] & in Vadodara.^[5]

Study did not find significant association of psychological stress with age, sex and literacy level of participants which is consistent with finding of study done by Desai GJ et.al 2012^[5] in Vadodara city. Study found significant association of Psychological stress with marital status of participants which is not consistent with the finding of study done by Desai GJ et.al 2012^[5] in Vadodara city. Psychological stress among workers is associated with unpleasant task, lack of variety, working under pressure, strict & inflexible working schedules, long hours of working with little rest in between, badly designed shift systems, unpleasant working environment and lack of support of organization, support from co-workers, friends and family members.^[19]

Workers who are in stress are suffering from distress, irritation, unable to concentrate, difficulty to take decision, feel less commitment to work, difficulty in sleeping, headache, backache and other physical problems of heart diseases, digestive system, musculoskeletal disorders etc.^[16] Study found 53.2%, 48.4%, 38.7% male and 35.3%, 38.2%, 35.3% female participants have sleeping, headache and backache problems respectively which is not consistent with findings of study done in Vadodara city.^[5]

CONCLUSION

The study was conducted to find out the psychological stress among un-organized construction workers at working site. After analyzing the results show that most of participants have high to extreme level of stress. This work stress can be reduce by applying the concept of level of prevention through ergonomics, work design, organizational development, workers training & counseling, pre-placement & periodic examination, enhanced occupational health services etc.

Conflicts of interest: No conflict of interest noted.

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