

A Study of Perceived Stress Level among Engineers working in Government and Private Sector

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ABSTRACT

Background: Stress is a natural concomitant of work life and is inevitable today. Stress has been examined among various groups of professionals such as accountants, managers, human service professionals, teachers, nurses and pilots, but little attention has been given to perceived stress level among engineers, and therefore present study was planned. **Objective:** 'To assess the, 'Perceived stress level among engineers working in government and private sector. **Material and Methods:** 60 engineers, 30 from private sector & 30 from government sector were taken from Mumbai (India). Among 30 engineers 15 were female engineers and 15 were male engineers, who were given Perceived stress scale (Cohen et al., 1988) along with semi structured interview. **Results:** indicated a) Perceived stress level among engineers working in private sector was more than perceived stress level among engineers working in government sector., b) Perceived stress level among female engineers was more than the perceived stress level in male engineers, c) Perceived stress level in female engineers working in private sector was more than perceived stress level in females working in government sector, d) Perceived stress level in male engineers working in private sector was more than perceived stress level in male engineers working in government sector. **Conclusion:** In nutshell, perceived stress level has a significant impact among male and female engineers working in private sector, as compared to engineers working in government sector. Therefore it is important to intervene.

Keywords: Perceived Stress Level, Engineers, Stress, Government and Private Sector

Stress is a natural concomitant of work life and is inevitable today. No individual is immune to stress, face it no matter what is his avocation (Tudu & Pathak, 2013). The word is derived from the latin word, stringere (Edworthy, 2000, Tudu & Pathak, 2013), meaning to draw tight. Organizational stress arises due to lack of person-environment fit (French et al., 1962, McGrath, 1976, Arnetz & Bengt, 1996). When organizational stress is mismanaged, it

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affects the human potential in the organization. It further leads to impaired quality, productivity, health and affects well-being and morale.

Stress in Engineers

Stress has been examined among various groups of professionals such as accountants, managers, human service professionals, teachers, nurses and pilots. But, little attention has been given to perceived stress level among engineers. According to some of the researches, the most commonly named occupational stressors among engineers are workload, relationships, home-work balance, managerial role, personal responsibility, hassles, recognition and organizational climate. Work overload was reported as a major stressor by many occupations, including engineers (Narayanan & Menon, 1999, Barling & Kelloway, 2004). However, majority of the prior research on stress level among engineers have been conducted outside India. There have been no reported studies on the stress level among engineers, especially in Mumbai (India). Therefore in view of the dearth of studies the present study aims to explore the perceived stress level among engineers working in government and private sector in Mumbai.

METHODOLOGY

The aim of the study was to examine perceived stress level among engineers working in government and private sector. The objectives were, a) to study and compare stress level between engineers working in private and government sector, b) to study and compare stress level of female engineers & male engineers working in private and government sector, c) to study and compare stress level of female engineers working in private and government sector, d) to study and compare stress level of male engineers working in private and government sector with the following hypothesis, a) perceived stress level among engineers working in private sector is significant than engineers working in government sector, b) perceived stress level in female engineers is significant than male engineers, c) perceived stress level in female engineers working in private sector is significant than female engineers working in government sector, d) perceived stress level in male engineers working in private sector is significant than male engineers working in government sector.

Sample

The study population consists of engineers of Mumbai. Purposive sampling was used. The total sample of 60 engineers consisting of 30 i.e., (15 male & 15 female) from government sector and 30 i.e., (15 male & 15 female) from the private sector working in Mumbai, including the following inclusion criteria were included, i.e., age between 22 to 30 years, of both genders (male & female), who were unmarried engineers, and could read and write English. Further, exclusion criteria, included, engineers below 22 years of age and above 30 years of age were not taken, those who were not engineers were not taken for the study, engineers suffering from any medical illness, engineers suffering from any kind of psychological, psychiatry, neurological illness, disease or disability were not included. Further those engineers who were married, and who could not read and write English, were not included in the study.

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Instruments

One measure was used in this study,

1. **The perceived stress scale (PSS) Cohen et al., (1988)** the most widely used psychological instrument for measuring the perception of stress was administered. It is a measure of the degree to which situations in one's life are stressful. Items were designed to tap how unpredictable, uncontrollable, and overload respondents find their lives. The scale also includes a number of direct queries about current levels of experienced stress. The items are easy to understand, and the response alternatives are simple to grasp. It consist of 10 items and for each item respondent indicates the frequency of the stress on a 4-point scale from 0 (Never) to 4 (Very often). 5 minutes are given to complete the test and next 5 minutes for scoring.

Procedure

The inclusion and exclusion criteria was applied to the engineers of Mumbai. The nature of the study was explained to the engineers who fulfil the exclusion and inclusion criteria. After furnishing the necessary information about the study, a written informed consent was taken from the engineers, after which the perceived stress scale (PSS) Cohen et al., (1988) was administered on them.

Statistical Analysis

For statistical analysis Mean, Standard Deviation and t- test was used.

RESULTS

The sample for the present study consisted of 60 participants (engineers), aged between 22-30 years. 30 engineers were from private sector and 30 from government sector. The mean age of participants/ engineers working in private sector was 24.6, with age range of 22-30 years, and the mean age for engineers working in government sector was 25.8, with age range of 22-30 years. The female: male ratio in the two groups was as follows- female: male 15: 15, both for engineers working in private and government sector. The educational qualification of most of the engineers was B.tech. The monthly income, of majority of engineers falls in the category of 10000 - 30000 [Table A].

Table: - A Description of the Identified Sample

Sectors	Private sector	Government sector
N	30	30
Age range	22-30	22-30
Age mean	24.6	25.8
SEX		
Female	15	15
Male	15	15
Education		
B.tech	25	24
M.tech	5	6
Annual Income		
Up to 100000	10	9
100000 to 300000	18	15
300000 and above	2	6

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Table:-1 Shows the mean, standard deviation and t value of two groups, i.e., engineers working in private sector and engineers working in government sector.

Sector	Mean	Standard deviation	T value
Government	28.56	4.03	.93
Private	22.63	3.92	

As can be observed from the table, for both the groups, the mean of private sector engineers was found to be lower than the government sector engineers.

T value .93, df 60, found to be non-significant at .05 level

Table:-2 Shows the mean, standard deviation and t value of two groups, female engineers and male engineers

Sex	Mean	Standard deviation	T value
Female engineers	23.03	4.62	.86
Male engineers	31.4	4.75	

As can be observed from the table, for both the groups, the mean of female engineers was found to be lower than the mean of male engineers.

T value .86, df 60, found to be non-significant at .05 level

Table:-3 Shows the mean, standard deviation and t value of two groups i.e., female engineers working in private sector and female engineers working in government sector

	Mean	Standard deviation	T value
Female engineers working in private sector	22.46	4.33	.51
Female engineers working in government sector	23.68	4.22	

As can be observed from the table, for both the groups, the mean of female engineers working in private sector was found to be lower than the mean of female engineers working in government sector. T value .51, df 28, found to be non-significant at .05 level

Table: -4 Shows the mean, standard deviation and t value of two groups, male engineers working in private sector and male engineers working in government sector.

Sector & Sex	Mean	Standard deviation σ	T value
Male engineers working in private sector	21.67	3.37	.71
Male engineers working in government sector	22.48	5.03	

As can be observed from the table, for both the groups, the mean of male engineers working in private sector was found to be lower than the mean of male engineers working in government sector, T value .71, df 28, found to be non-significant at .05 level.

DISCUSSION

Stress is a natural concomitant of work life and is inevitable today. No individual is immune to stress, face it no matter what is his avocation (Tudu & Pathak, 2013). The word is derived from the latin word, stringere (Edworthy, 2000, Tudu & Pathak, 2013), meaning to draw

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tight. Organizational stress arises due to lack of person-environment fit (French et al., 1962, McGrath, 1976, Arnetz & Bengt, 1996). When organizational stress is mismanaged, it affects the human potential in the organization. It further leads to impaired quality, productivity, health and affects wellbeing and morale.

Stress has been examined among various groups of professionals such as accountants, managers, human service professionals, teachers, nurses and pilots. But, little attention has been given to perceived stress level among engineers. According to some of the researches, the most commonly named occupational stressors among engineers are workload, relationships, home-work balance, managerial role, personal responsibility, hassles, recognition and organizational climate. Work overload was reported as a major stressor by many occupations, including engineers (Narayanan & Menon, 1999, Barling & Kelloway, 2004). However, majority of the prior research on stress level among engineers have been conducted outside India. There have been no reported studies on the stress level among engineers, especially in Mumbai (India). Therefore in view of the dearth of studies the present study aims to explore the perceived stress level among engineers working in government and private sector in Mumbai.

Perceived stress level among engineers working in private sector and engineers working in government sector

In the sphere of perceived stress level among engineers working in private and government sector, the result signify that more perceived stress was among the private sector engineers as compared to the government sector engineers because the mean (22.63, table no:-1) for the private sector engineers was found to be lower than the mean of government sector engineers (28.56, Table no:-1). In the light of the above findings, thus our first hypothesis perceived stress level among engineers working in private sector is significant than engineers working in government sector gets accepted.

Further our first hypothesis is also getting accepted as our t value .93 came out to be non significant at .05 level, which leads to the acceptance of our first hypothesis i.e., perceived stress level among engineers working in private sector is significant than engineers working in government sector. During the semi structured interview also private sector engineers reported that they feel stressed in their jobs. Similar results were found in a study done by (Rajubhai, 2014), on jobstress of government and private employees including a sample of 60 employees, i.e., 30 from government sector and 30 from private sector in surendranagar city, by applying jobstress scale developed by A.K Srivastav and A.P Singh, whereby they found more jobstress among private employees than government employees.

Perceived stress level in female engineers and male engineers

In the sphere of perceived stress level among female engineers and male engineers, the result signify that more perceived stress was among the female engineers as compared to the male engineers because the mean (23.03, table no:-2) for the female engineers was found to be lower than the mean of male engineers (31.04, Table no:-2). In the light of the above

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findings, thus our second hypothesis perceived stress level in female engineers is significant than male engineers gets accepted.

Further our second hypothesis is also getting accepted as our t value .86 came out to be non significant at .05 level, which leads to the acceptance of our second hypothesis i.e. perceived stress level in female engineers is significant than male engineers. These findings are supported by the findings of the study done by (Jick and Miltz, 1985), wherein they reviewed 19 different studies related to gender differences in occupational stress and found that women experienced high psychological distress than males and males on the other hand experienced more physical distress than females.

Perceived stress level in female engineers working in private sector and female engineers working in government sector

In the sphere of perceived stress level among female engineers working in private sector and female engineers working in government sector, the result signify that more perceived stress was among the female engineers working in private sector than female engineers working in government sector because the mean (22.46, table no:-3) for the female engineers working in private sector was found to be lower than the mean of female engineers working in government sector (23.68, Table no:-3). In the light of the above findings, thus our third hypothesis perceived stress level in female engineers working in private sector is significant than female engineers working in government sector gets accepted. Further our third hypothesis is also getting accepted as our t value .51 came out to be non significant at .05 level, which leads to the acceptance of our third hypothesis i.e. perceived stress level in female engineers working in private sector is significant than female engineers working in government sector.

Similar findings were found in a study by (Shobana et al., 2016), on occupational stress among women working in government and private sector, where in she found a significant difference in stress level between working women in government and private sectors and higher stress was found among women working in private sector than women in government sector.

Perceived stress level in male engineers working in private sector and male engineers working in government sector

In the sphere of perceived stress level among male engineers working in private sector and male engineers working in government sector, the result signify that more perceived stress was among the male engineers working in private sector than male engineers working in government sector because the mean (21.67, table no:-4) for the male engineers working in private sector was found to be lower than the mean of male engineers working in government sector (22.48, Table no:-4). In the light of the above findings, thus our fourth hypothesis perceived stress level in male engineers working in private sector is significant than male engineers working in government sector gets accepted. Further our fourth hypothesis is also getting accepted as our t value .71 came out to be non significant at .05 level, which leads to

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the acceptance of our fourth hypothesis i.e. perceived stress level in male engineers working in private sector is significant than male engineers working in government sector.

Limitations

Since, the study sample is small; results cannot be generalized to a larger population. A prospective study with a larger sample size and objective data evaluation would be ideal.

CONCLUSION

In nutshell, perceived stress level has a significant impact among male and female's engineers working in private sector, as compared to engineers working in government sector, therefore it is important to intervene.

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Conflict of Interest

The authors colorfully declare this paper to bear not conflict of interests

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