

Occupational stress among professionals

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ABSTRACT

Stress is so imbedded in us that it has become lifestyle itself. In fast changing world, no profession is stress free. Unhealthy occupational stress results into accidents, absenteeism, presenteeism, hence costs productivity and output. It a major root cause beneath the onset of many lifestyle diseases like Diabetes, Heart diseases, Obesity, Alzheimer's disease, Parkinson's disease, Cancer etc and adversely affect mental and social wellbeing. The present study was carried out to assess the level of occupational stress among professionals. One hundred three subjects aged 30-60 years in four groups (doctors, nurses, bankers and professors) were selected by purposive random sampling technique from Rohtak area of Haryana, India. A self-designed Questionnaire was formulated to elicit information regarding the socio-economic and work profile, food habits, dietary practices, nutritional knowledge and stress awareness of subjects. Occupational Stress Inventory Scale was used to assess the occupational stress level. In the present study, the mean occupational stress levels for doctors, nurses, bankers and professors were 135.09 ± 18.45 , 128.80 ± 16.61 , 124.63 ± 14.76 and 117.00 ± 20.12 , respectively. One way anova analysis showed a significant ($p \leq 0.002$) difference in the stress levels according to profession ($F=5.17$). Doctors have highest occupational Stress Level. Bankers have more or less similar stress levels as nurses. Professors have low stress level. The post-hoc tukey multiple comparison showed that stress level of doctors is significantly different from professors ($p \leq 0.001$) but not from nurses and bankers. Reasons behind the high level of occupational stress in professionals seemed heavy work load, consistently changing work shifts and longer working hours and non-congenial work conditions.

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INTRODUCTION

We live in a world developing fast, requiring constant adaptation. Technology is changing, so are social habits, values, social structures and people. In the process of coping with life's pressures and problems, negative feelings can generate (Thompson *et al.*, 1994). Stress can affect either positively or negatively to employee performance. Stress, up to a certain point, will improve people's performance and quality of life because it is

healthy and essential that they should experience challenges within their lives (Tehrani and Ayling, 2009), but if pressure becomes excessive, it loses its beneficial effect and becomes harmful (Cooper *et al.*, 1988). A high level of occupational stress, not only detrimentally influence the quality, productivity and creativity of the employees but also employee's health, wellbeing and morale (Cohen and Williamson, 1991). According to European agency for safety and health at work (2002) work-related stress is a significant problem and represents

a major challenge to occupational health throughout the world. Stressors can be environmental, biological, physiological and psychological. External causes of stress can be major life changes, work pressure, relationship difficulties, financial problems, being too busy, children and family etc. Internal causes of stress may include inability to accept uncertainties, pessimism, negative self-talk, unrealistic expectations, perfectionism, lack of assertiveness etc. Extreme efforts over the time turns in to chronic stress can result in either mental or physical exhaustion or injury (Kolich and Wong-Reiger, 1999). Chronic stress disrupts nearly every system in the body. Stress signs are general negative outlook, poor judgment, exaggerated worrying, continuous unhappiness, irritability, aggressiveness, inability to relax, feeling lonely or isolated, depressed. However, there were always two ways of stress and disease relation: from psychological to physiological problems and from the biological illnesses to mental disorder. Landsbergis (2003) commented that some studies suggest a relationship between stressful working conditions and inter alia cancer, ulcers and even suicides. Premature aging of an individual's immune system as well as shrunken brain neurons could be a direct result of stress (McEwen, 2006). Heim (1991) and Arnetz (1991) observed suppress immune system increase the risk of heart attack and stroke, contribute to infertility and pre-mature births and speed up aging process. Gastrointestinal diseases, neurodegenerative diseases, infectious and immunological diseases as well as cancer can be the result of chronic stress. Heim (1991) and Arnetz (1991) observed in their separate studies that women physicians have a life expectancy 10 years lower than the general population. Occupational or work-related stress, as such has a direct effect on all nursing members of the work force, might it be of long, short or immediate duration or a once off experience (Reisner, 2004). Occupational stress is linked to disease and illnesses experienced by nursing professionals (Norrie, 1995). According to the W.H.O. (2011), stress especially that relating to work, is the second most frequent health problem, impacting one third of employed people in the European Union. Considering the role of occupational stress in human health, the present study was conducted to assess the existing level of occupational stress among different professionals.

MATERIAL AND METHODS

Locale for the study :

The locale for the study was Rohtak city in Haryana, India.

Sample selection :

The total sample size comprised of one hundred three professionals were selected from different fields [doctors (n=22), nurses (n=15), bankers (n=24) and associate professors (n=42)] using snowball sampling technique.

Data collection:

General information :

General information was collected through questionnaire cum interview method. Information on personal, work and family profile, food habits and dietary intake was collected through self-structured questionnaire.

Occupational stress index :

Stress level was assessed using Occupational Stress Index constructed and standardized by Srivastava and Singh (2002).

Statistical analysis of data :

Data was statistically analysed through SPSS 16.0. To assess the significant difference in occupational stress levels of professionals, one-way anova was used. Post-hoc tukey multiple test was used to analyze the significant difference in the mean occupational stress level among different professional groups.

OBSERVATIONS AND ANALYSIS

The general information of the respondents was represented in Table 1. On age wise distribution, percentage of professors belonged to age group 30-40 years was nearly forty eight per cent (47.61%), while more than twenty six per cent professors (26.19%) belonged to age group 40-50 years and 50-60 years each. Amongst bankers who fell in age group 30-40 years, 40-50 years and 50-60 years were twenty nine per cent (29.16%), twenty five per cent (25.00%) and forty six per cent (45.83%), respectively. A large chunk of doctors (81.81%) fitted in the age group of 30-40 years, while slightly less than one fifth parts (18.18%) belonged to age group 40-50 years and none of the subject fell in age group 50-60 years. More than half of a cent (53.33%)

nurses belonged to age group 30-40 years, while one fifth (20.00%) went in age group 40-50 years and more than one fourth (26.66%) fell in age group 50-60 years. Regarding gender wise allocation, nearly three fourth (73.83%) female and one fourth (26.19%) male professors were included in the study. Percentage of male and female bankers were nearly eighty (79.16%) per cent and twenty per cent (20.83%), respectively. A major percentage (81.18%) of doctors participated in the study were males while less than one fifth (18.18%) were female. All nurses (100.00%) selected in the study were females. On the basis of academic qualification, about sixty per cent (57.14%) professors were postgraduate while more than forty per cent (42.85%) were having doctoral degree. Maximal numbers of bankers (62.50%) were graduates followed by one third (33.33%) postgraduates and only four per cent (4.16%) were having doctoral degree.

Doctors were having postgraduate degree (77.27%) in majority and others (22.72%) were having graduate degree. Nurses holding graduate and postgraduate degree were forty per cent (40.00%) each while twenty per cent (20.00%) were having undergraduate degree (Nursing diploma). Amongst professionals, least numbers of professors (9.52%) were having income less than Rs. five lacs while maximum number of nurses (60.00%) fell in this income group of less than Rs. five lacs. One fourth bankers (25.00%) and nearly thirty two per cent (31.81%) doctors received annual income less than Rs. five lacs. Bankers (58.33%) were ranked highest in the income group of Rs. five to eight lacs followed by doctors (40.90%), then professors (35.71%) and lastly nurses (26.66%). Between one tenth and one fifth fraction of professors (14.28%), bankers (16.66%) and doctors (18.18%) were having annual income Rs. eight to ten

Table 1 : General information of the professionals

Variables		Professionals (n=103)			
		Professors (n=42)	Bankers (n=24)	Doctors (n=22)	Nurses (n=15)
Age (Years)	30-40	20(47.61%)	7(29.16%)	18(81.81%)	8(53.33%)
	40-50	11(26.19%)	6(25.00%)	4(18.18%)	3(20.00%)
	50-60	11(26.19%)	11(45.83%)	0	4(26.66%)
Gender	Male	11(26.19%)	19(79.16%)	18(81.81%)	0
	Female	31(73.83%)	5(20.83%)	4(18.18%)	15(100.00%)
Qualification	Undergraduate	0	0	0	3(20.00%)
	Graduate	0	15(62.50%)	5(22.72%)	6(40.00%)
	Post Graduate	24(57.14%)	8(33.33%)	17(77.27%)	6(40.00%)
	Doctorate	18(42.85%)	01(4.16%)	0	0
Annual Income (Lakhs)	< 5	4(9.52%)	6(25.00%)	7(31.81%)	9(60.00%)
	5-8	15(35.71%)	14(58.33%)	9(40.90%)	4(26.66%)
	8-10	6(14.28%)	4(16.66%)	4(18.18%)	0
	> 10	17(40.47%)	0	2(9.09%)	2(13.33%)

Table 2: Work profile of the professionals

Variables		Professor (n=42)	Doctor (n=22)	Nurse (n=15)	Banker (n=24)
Length of work experience (Years)	<10	12(28.57%)	15(68.18%)	7(46.66%)	10(41.66%)
	10-20	18(42.85%)	6(27.27%)	-	10(41.66%)
	> 20	12(28.57%)	1(4.54%)	8(53.33%)	4(16.66%)
Work shift	Morning	42(100.00%)	8(36.36%)	5(33.33%)	24(100.00%)
	Evening/Night	-	14(63.63%)	10(66.66%)	-
Working conditions	Congenial	39(92.85%)	17(77.27%)	14(93.33%)	21(87.50%)
	Non-congenial	3(7.15%)	5(22.72%)	1(6.66%)	3(12.50%)
Work load	Overloaded	8(19.05%)	11(50.00%)	11(73.33%)	13(54.16%)
	Normal	34(80.95%)	11(50.00%)	4(26.66%)	11(45.83%)
Work Hour	< 8	42(100.00%)	10(45.45%)	1(6.66%)	6(25.00%)
	> 8	-	12(54.54%)	14(93.33%)	18(75.00%)

lacs. Proportion of professionals receiving annual income more than ten lacs was lesser as nearly nine per cent doctors (9.09%), thirteen per cent nurses (13.33%) and forty per cent professors (40.47%) fell in income group more than Rs.10 lakhs, while no banker fell in this group.

Data regarding distribution of respondents according to their work profile is depicted in Table 2. As far as length of work experience was concerned, more than one fourth of professors (28.57%) were having less than 10 years and more than 20 years each and rest of professors (42.85%) had work experience in between 10-20 years. On placing in descending order, largely doctors (68.18%) had work experience of less than 10 years followed by twenty seven per cent doctors (27.27%) having work experience in between 10-20 years and very few doctors (4.54%) had work experience of more than 20 years. Amongst nurses, more than half (53.33%) had work experience of more than 20 years whilst about forty seven per cent (46.66%) had work experience of less than 10 years. None of the nurses had work experience in between 10 and 20 years. Bankers (41.66%) had work experience of less than 10 years and in between 10-20 years each in equivalent proportion whereas rest (16.66%) were having work experience of more than 20 years. On the basis of work shift allocation, the whole group of professors and bankers (100.00% each) had morning shifts. Majority of doctors (63.63%) and nurses (66.66%) had alternate shift changes-morning and evening/night, amidst which nearly one third doctors

(36.36%) and nurses (33.33%) were assigned only morning shift due to senior positions. On the ground of work congeniality, a big chunk of professionals *i.e.* professors (92.85%), doctors (77.27%), nurses (93.33%) and bankers (87.50%) reported working in congenial conditions while rest of them found it non-congenial. Regarding work load of professionals at the respective work place, equal percentage of doctors (50.00% each) reported having average and excess workload. A large percentage of nurses (73.33%) and more than half bankers (54.16%) but less than one fifth professors (19.05%) reported themselves as overloaded on workplace. On the other side, about twenty seven per cent nurses (26.66%), about forty six per cent bankers (45.83%) and a large chunk of professors (80.95%) reported average work load at the work place. Concerning working hours per day, all professors (100.00%) worked for less than eight hours while lesser fraction of other professionals *i.e.* doctors (45.45%), nurses (6.66%) and bankers (25.00%) had working hours less than eight. Majority of doctors (54.54%), nurses (93.33%) and bankers (75.00%) were having work hours more than eight.

Table 3 summarised the distribution of respondents according to their occupational stress level. In reference to low level of occupational stress, professors fell in this category on largest, with minimum of doctors. In moderate stress level, there was a difference of about one tenth among different group of professionals, maximum of doctors and minimum of professors fell in this category.

Table 3 : Occupational stress level of the professionals

Level of occupational stress	Doctors	Nurses	Bankers	Professors
Low *(46-121)	4(18.18%)	5(33.33%)	11(45.83%)	25(59.52%)
Moderate *(122-156)	15(68.18%)	9(60.00%)	12(50.00%)	15(35.71%)
High *(157-230)	3(13.63%)	1(6.66%)	1(4.16%)	2(4.76%)

*Occupational Stress Inventory scale by Srivastava and Singh (2002)

Table 4 : Average occupational stress level of professionals

Professionals	Number	Mean	Std. Error	Stress level	
				Minimum	Maximum
Doctor	22	135.09±18.45	3.93	101.00	182.00
Nurse	15	128.80±16.61	4.29	102.00	160.00
Banker	24	124.63±14.76	3.01	102.00	156.00
Professor	42	117.00±20.12	3.10	75.00	189.00
Total	103	124.36±19.23	1.89	75.00	189.00

In high stress level, doctors were highly stressed amongst professionals and bankers at minimum. It showed amongst all professionals, majority of professionals fell under category of moderate stress and minimum under high stress. Amid doctors, maximum percentage of doctors (68.18%) had moderate stress level followed by low stress (18.18%) and high levels of stress (13.63%). In a similar way, maximum percentage of nurses (60.00%) were having moderate stress, about one third (33.33%) in low stress and few nurses (6.66%) in high stress levels. Bankers also had stress level in related manner to nurses, one half of bankers (50.00%) were having moderate stress and almost forty six per cent of bankers (45.83%) had low stress level whereas less than five per cent bankers (4.16%) had high stress. Regarding professors, largest percentage of professors (59.52%) were observed having low and minimum (4.76%) with high occupational stress levels, whilst nearly thirty five per cent professors (35.71%) had moderate stress. Distribution of respondents according to occupational Stress level depicted (Fig.1) that amongst all professionals, highest number of professionals were having moderate stress except professors who maximally fell in low level of stress.

Average occupational stress level of doctors was

135.09±18.45 with minimum stress level of 101 and highest of 182 (Table 4). Nurses were having average stress level of 128.80±16.61 which ranged between 102 and 160. Bankers had nearly similar average occupational stress level as nurses' *i.e.* 124.63±14.76 within the range of 102 and 156. Professors had lowest average stress level 117.00±20.12 which varied from 75 and 189. In diagrammatic representation of average occupational stress level of professionals (Fig. 2), it was observed that doctors had highest stress level among professionals followed by nurses, bankers and professors. Professors were observed in least stressed state. One way anova analysis showed that there was significant ($p \leq 0.002$) difference in occupational stress level of professionals (Table 5). The post-hoc tukey multiple comparison (Table 6) showed the significant differences in the average occupational stress level of professionals. Average stress level in doctors was significantly higher than professors ($p \leq 0.001$). Occupational stress level of doctors ($M=135.09, SD=18.45$) was greater than professors ($M=117.00, SD=20.12$).

The present study revealed that among all the professionals, doctors had the highest occupational stress level followed by nurses, bankers and professors. The findings of the present study are in line with the study of

Table 5 : Analysis of variance for occupational stress level of professionals

Source of variation	Sum of squares	Df	Mean Square	F	Sig. (p-value)
Between groups	5105.87	3	1701.96	5.17	.002*
Within groups	32605.84	99	329.35		
Total	37711.71	102			

* indicates significance of value at $P \leq 0.05$

Table 6 : Tukey multiple comparisons of stress level

Profession		Mean difference	Std. Error	Sig. (p-value)
Professor	Nurse	-11.80	5.46	.141
	Doctor	-18.09*	4.78	.001
	Banker	-7.63	4.64	.360
Nurse	Professor	11.80	5.46	.141
	Doctor	-6.29	6.08	.729
	Banker	4.18	5.97	.897
Doctor	Professor	18.09*	4.78	.001
	Nurse	6.29	6.08	.729
	Banker	10.47	5.36	.213
Banker	Professor	7.63	4.64	.360
	Nurse	-4.18	5.97	.897
	Doctor	-10.47	5.36	.213

* indicates significance of value at $P \leq 0.05$.

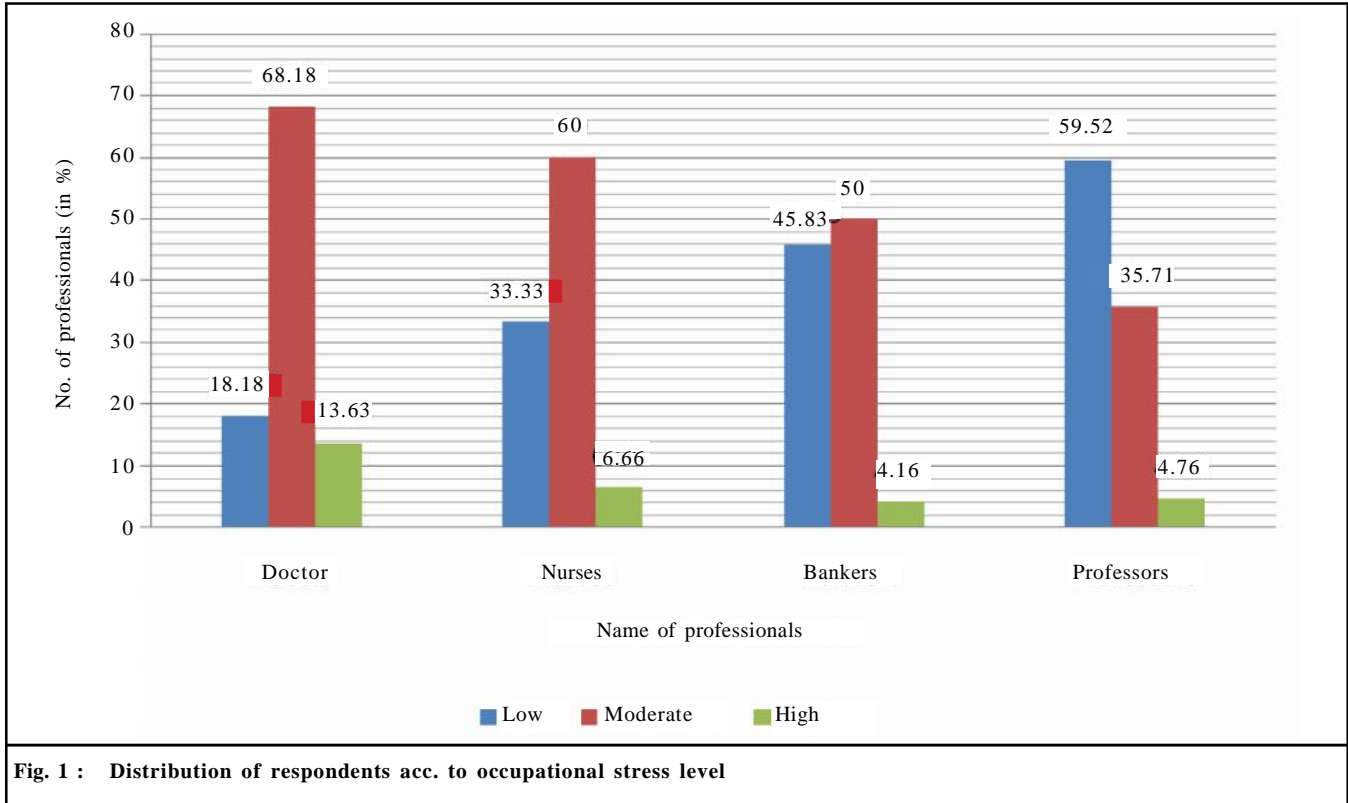


Fig. 1 : Distribution of respondents acc. to occupational stress level

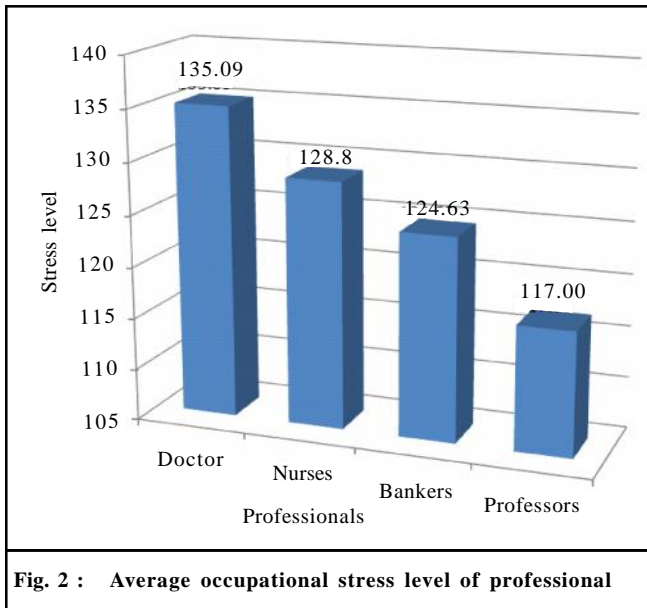


Fig. 2 : Average occupational stress level of professional

Anitha Devi (2007) who aimed at identifying the degree of life stress and role stress experienced by 180 professionals belonging to six occupations. The result showed science and technology professionals and doctors experienced significantly greater life and role stress

followed by administrators and self-employed. Teachers and bankers experienced comparatively lesser stress in both role as well as life. Ravichandran and Rajendran (2007) focuses on perceived sources of stress among the teachers. The study showed that sex, age, educational levels, years of teaching experience and types of school, play a significant role in the perception of various sources of stress related to the teaching profession. In the present study, shorter length of work experience was also one of reason for younger professionals being stressed. According to Blustein (2008), considerable age differences in reports of workplace stress were found with a gradual reduction in identifying work issues as contributing to stress with increased age. In particular, those in the 26 to 35 age bracket were significantly more likely to report the workplace as a source of stress (43%) and those in the 18 to 25 age group reporting a significantly lower level of positive experience in the workplace. Nevertheless, for some people aspects of the workplace contributed to positive health and wellbeing with lower scores on stress, distress, anxiety and depression. These people reported that their job was interesting, they were paid appropriately, felt valued by their employer and were

satisfied with their work/life balance. This was particularly true for older adults and especially for those over 55 years of age. These findings are in line with research looking at work practices which indicates that the workplace can be a source of wellbeing, providing a means for individual satisfaction and accomplishment. It was also observed in the present study that stress in those professionals were higher who were overloaded at work place, had longer working hours and non-congenial working conditions as well. According to Dembe *et al.* (2002), twelve hour shifts have been reported to take a toll on nurses' health. Research showed that working 12 or more hours per day can increase the risk of work illness or injury by 37.8 per cent, while working 60 or more hours per week could increase the risk by 23 per cent. Gray-Toft and Anderson (1981) focused on specific stressful situations for nurses, which affect their work performance, when they developed the Nursing Stress Scale (NSS), identifying three sources of stress from: the physical, psychological and social environment. The working conditions such as the wrong ventilation, lighting and the inadequate temperature levels are among the potential work-related stressors (European agency for Safety and Health at Work, 2002). Dual responsibilities of work and family were also major causes of stress in female professionals. Professors had low stress level due to lesser working hours, thus more of family and leisure time. The findings of the present study are in line with the observations of Cox *et al.* (2000) study which indicated that 56 per cent of nurses reported that a vast amount of interference was present between their work and family or home lives. One particular stressor was that of irregular hours. This interference affected family routines and events, child rearing and household responsibilities, made nurses moody at home and conflicted with leisure and social life. Present study further revealed that constantly changing work shifts were the main reason behind the work stress in doctors and nurses. Investigation by Kobayashi *et al.* (1999) revealed that shift workers had a 40 per cent increased risk of developing cardiovascular disease. They also pinpointed the related risk factors leading to this increased incidence. Disrupted socio-temporal patterns, lack of desired social support, increased levels of stress, poor health-related behaviour such as smoking, an unbalanced diet, increased alcohol consumption and lack of exercise, as well as biochemical changes including undesired cholesterol and triglyceride levels were all

factors mentioned in relation to shift work.

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