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OCCUPATIONAL HEALTH CONCERNS OF SOFTWARE PROFESSIONALS AND THEIR COPING STRATEGIES

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Software Development Industry is one of the growth engines of the world economy. To propel this growth, software professionals are spending long hours to do stressful mental work sitting in front of a computer. Software industry has made the world flat which means employees are working day and night to coordinate with their colleagues across the globe. The nature of work and work schedules are putting the health of young software professionals in danger. This exploratory research discusses the occupational health problems faced by Offshore (India) and Onsite (USA) employees of a software development company. The study of the practiced work lifestyle of the employees in India and USA reveals that Macro Ergonomic factors like working hours, rest breaks and exercise are crucial factors affecting occupational health. This study throws light on the practices adopted by the employees to cope with the occupational health problems.

Keywords: Organizational Behavior, Occupational Health, Software Professionals, Macro Ergonomic factors, Qualitative Research

INTRODUCTION

The Indian Software Industry is a leader in exporting cost effective skilled IT labor and services in the present boundary less economy. With its Global Delivery Model, it provides significant cost savings, flexibility and improved operational performance for its international clients. The United States is the largest market (59%) for the Indian IT outsourcing industry, followed by Europe (27%), Asia-pacific (9%) and

rest of the world (5%) (Price Water house Coopers, 2005).

In order to provide cost effective and quality service across the globe, large numbers of young professionals have to work day and night to coordinate with their multinational counterparts. They perform long stretches of highly complicated and stressful mental work on computer. The nature of work and demanding work schedules are putting the health of young

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software professionals in danger. The present research throws light on the health problems faced by young software professionals. To understand the causes and coping strategies, the lifestyle of the software professionals is studied on the macro ergonomic parameters like working hours, time spent in front of computer screen, rest breaks and exercises.

METHODOLOGY

The primary and secondary data has been used to identify the health concerns, causes and coping strategies.

Sample

The data was collected from the following group of employees of an Indian software company with global presence.

Group 1 (Offshore): 30 male employees working in base locations in India.

Location: Bangalore, Pune & Chennai.

Group 2 (Onsite): 30 male employees working in USA for the clients of their Indian employer.

Location: Minneapolis, Boston and Chicago.

Work Experience: At least 4 years.

Tool

Primary data has been collected through a qualitative questionnaire specially designed for software professionals. A common questionnaire was designed based on the information gathered through personal interviews of software professionals of each group. The tool was administered personally and online.

Mean Age:

India: 29 Years

USA: 30 Years

Health Concerns

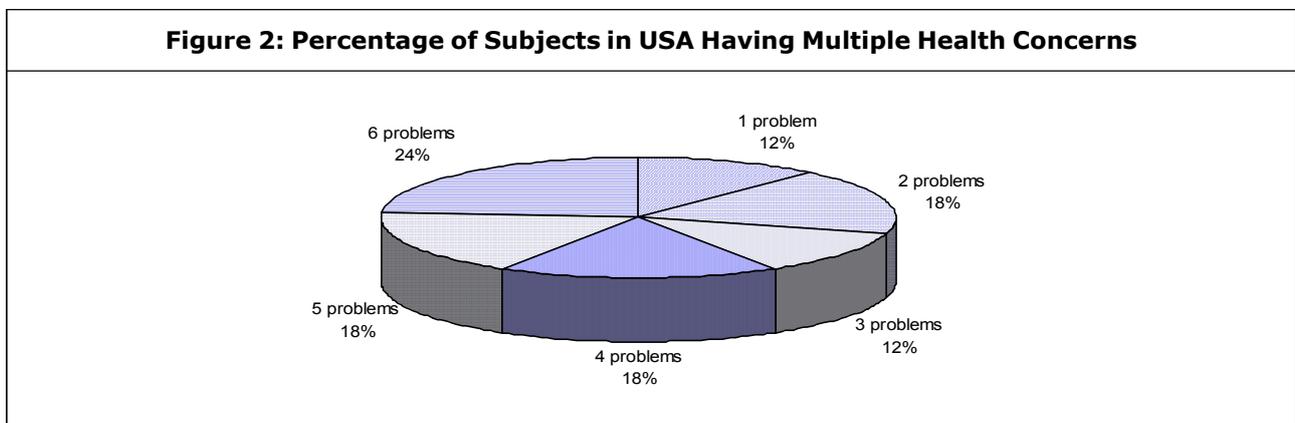
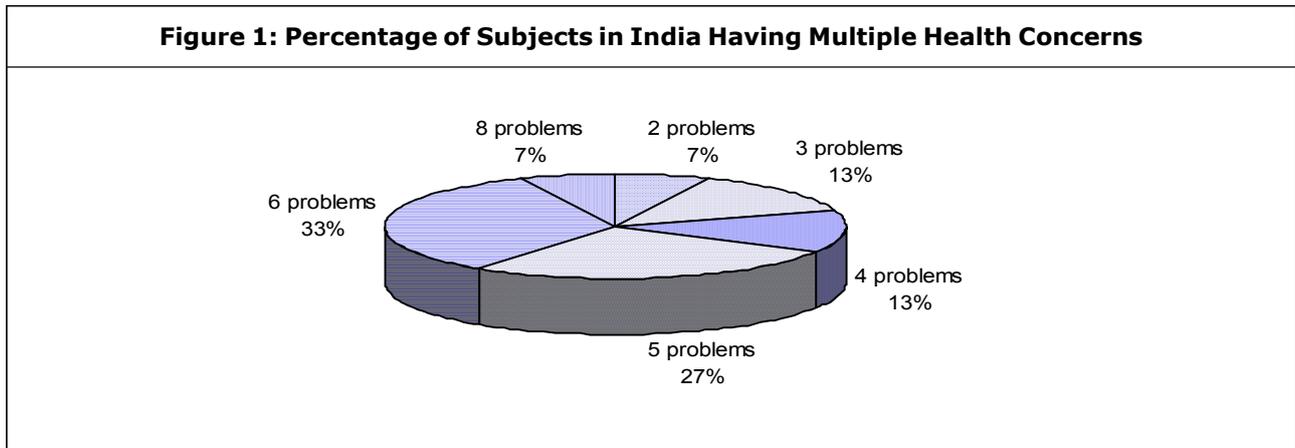
Table 1 shows the health problems and their frequency as reported in this study. The results indicate that Eyestrain is the most common health concern among software professionals followed by general fatigue, back pain and headache. Subjects in India reported that they feel fatigue almost everyday. Almost all subjects of both the groups were not having any concerns regarding Blood Pressure, Cholesterol and Diabetes at this point of time.

Among other studies, Suparna *et al.* (2005) reported prevalence of visual problems in 76% subjects and back pain in 77.5% subjects. Choudhary *et al.* (2003) also reported visual problems in 76% subjects and reported that 26% subjects felt tired at the end of the day and 12% felt completely exhausted. According to Giri, PA (2010), 73.3%, and Talwar R. *et al* (2008), 76.5 % of subjects reported back problems. Surveys of computer workers reveal that vision-related problems are the most frequently reported health problem, occurring in over 70% of computer workers (Verma, 2001).

It is noteworthy that there was significant overlapping of the symptoms with most of the employees reporting more than one group of computer related health problems. 100 % of Indian subjects and 88% of subjects in USA reported to have 2 or more health concerns. Among the subjects in India 33 % and among the subjects in USA, 24% are having 6 health concerns out of 10 health concerns studied. Refer to Figures 1 and 2.

This result is in accordance with the study done by Giri A (2010) who reported 93.3% and Shah *et al.* (1999) who reported 93.5% of the study

Table 1: Health Concerns of Software Professionals				
Problems	India (Offshore)		USA (onsite)	
	Percentage of total subjects reported the problem	Average frequency of Occurrence	Percentage of total subjects reported the problem	Average frequency of Occurrence
Eye Strain	86%	Once or twice a week	70%	Once or twice a week
General Fatigue	66%	Almost everyday.	70%	2 to 3 times a month
Back Pain	73%	2 to 3 times a month	58%	2 to 3 times a month
Headache	66%	Once or twice a week	64%	2 to 3 times a month
Neck Pain	53%	Once or twice a week	47%	2 to 3 times a month
Body ache	46%	Once a month	60%	2 to 3 times a month
Stomach Problems	40%	2 to 3 times a month	5%	2 to 3 times a month
Blood Pressure	10%	-	None	-
Cholesterol	None	-	5%	-
Diabetes	None	-	None	-



subjects having one or more computer related health problems among software professionals.

Causes

Long Working Hours and After Office Work

In India the subjects reported average working hrs of 10.5 hrs while in USA it was 7.5 hrs. Apart from these regular hours, 73 % subjects in India and 66 % subjects in USA have to work in office late night and on holidays once a month. Almost all subjects in USA have to work from home late night for an average time of 1 ½ hrs to coordinate with their offshore teams. Giri A. (2010) observed that prevalence of physical discomfort was higher among those who used computers for more than 8 hours/day ($p < 0.05$).

Prolonged Sitting

The average time spent for rest breaks (coffee breaks and small exercises) by the subjects in India and USA is 18 minutes and 17.5 minutes respectively. The remaining time is spent sitting on the office chair. According to John J *et al* (2006) back pain is one of the most common work-related injuries and is often caused by ordinary work activities such as sitting in an office chair. Rao KC *et al* (2009) found a significant correlation between duration of work without a break and frequency of symptom occurrence.

Interaction with Visual Display Unit

The average hours spent on work on computers by subjects in India and USA are 8.2 hrs and 8.5 hrs (6 hrs in office and 2 .5 hrs at home) respectively. Apart from this, 93% of subjects in India and 100% subjects in USA spend about 1.5 hrs on weekdays and about 5 hrs on weekends on laptop or television for relaxation. It was found that there was a gradual increase in visual complaints as the number of hours spent working on computers daily increased and the same

relation was found to be true for musculoskeletal problems as well (Talwar R., 2009).

Lack of Adequate Exercise

The study shows that the average time spent on small exercise in office is just 6 minutes for Indian subjects and 7.5 minutes for onsite subjects. Only 40% of subjects in India do regular exercise at home. None of the subjects use exercise and sports facility at office. According to Choudhary *et al.* (2003) 66% of subjects do not exercise adequately.

Coping Strategies

Sleep: A good sleep was found to be the most common strategy to cope up with the health concerns. All the subjects in India and USA sleep for 6 to 7 hrs on weekdays and more than 7 hours on weekend to cope with eye strain, headache and body ache.

Physical Exercise, Swimming, Walking and Sports

Sports: 88% subjects in USA spend about 1 hour daily in these activities while the same is done by only 40% subjects in India.

Relaxation at Home: 100% respondents of both the groups reported that they spend 4 to 6 hours on weekends on activities like prayer, shopping and parties. They also spend an average of 5 hours on laptop and television for relaxation.

Breaks During Work: According to this study all the subjects working onsite and offshore take rest breaks on an average 2 times a day. The average total time spent on these breaks in a day was found to be 12 minutes and 10 minutes for offshore and onsite subjects respectively. Henning (1997) reported that frequent short breaks can benefit worker productivity and well-being. These breaks can be in the form of coffee beaks or include small exercises like stretching,

small walks, shoulder shrugs, neck rolling, eye blinking, etc. According to WISHA 2002 shorter (one to three minutes) and more frequent (every 30-60 minutes) breaks may help to reduce discomfort while improving productivity.

CONCLUSION

This study shows that a significant proportion of the computer professionals were having health problems like eye strain, headache, body ache, general fatigue etc. Long working hours and constant use of visual display units are the major causes of such problems. Proper rest breaks, physical exercise, adequate sleep and relaxation at home are very easy and beneficial strategies to cope with the health problems. These strategies will help to prevent serious health problems among people working in the computer field.

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