

HEALTH PROBLEMS IN CALL CENTER WORKERS WITH SPECIAL REFERENCE TO MUSCULOSKELETAL DISORDERS

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ABSTRACT

Introduction: The call centre industry in India has been established only over last decade. The industry is touted as magic wand that will ward off unemployment for thousands of young graduates. But with its boom, there are concerns regarding health issues which are unique to this industry. The long periods of working at a computer can cause musculoskeletal problems, eyestrain, headaches and overuse injuries of the hands and wrists. This study was done to determine the prevalence of health problems, specially musculoskeletal disorders and associated factors among call center workers.

Materials & Methods: A cross sectional study was conducted including workers from three different call centers located in Mumbai, India. A total of 122 subjects were interviewed after taking prior consent from office heads using a self administered questionnaire. Data thus collected was analyzed using SPSS ver. 17.

Results: Mean age of study subjects was 23.4 years with two third of the subjects being males. Most common health problem associated with call center workers was irritated mood (67.2%), musculoskeletal problems (62.3%), visual problems (58.2%) and sleep disturbances (32.8%). Neck pain was the most common musculoskeletal problems followed by backache. Musculoskeletal problems were significantly associated ($p < 0.05$) with time spent on computer screen, duration of job and availability of ergonomic furniture at the work place

Conclusion: The ergonomics of the working environment of the computer professionals have a direct impact on their well being. Hence the organizations employing them, as well as the professionals themselves need to be sensitized regarding the importance of the regular health checkups and proper working conditions.

KEYWORDS: Call Center Workers, Ergonomics, Job Duration, Musculoskeletal Disorders

INTRODUCTION

In the twenty-first century, computers have become almost as ubiquitous as the humble pen and paper in many peoples' daily life. There are approximately six computers per thousand population with an installation of 18 million personal computers (PCs) and their number is increasing all the time. The computer is a vital tool in every dimension. However, the long periods of working at a computer as most people do, can cause musculoskeletal problems, eyestrain, and overuse injuries of the hands and wrists which can be reduced or eliminated with proper workstation design and improved posture. [1]

In the last two decades, India has witnessed a very rapid economic growth. One of the most important factors related to this rising growth has been the Information Technology (IT) industry. Business Process Outsourcing (BPOs) companies have mushroomed and are a visible concrete expression of this IT revolution. The availability of cheap labor costs and the pool of skilled, English-speaking workforce are the foremost factors for the call center boom in the country. When a company concentrates on the core business and out sources its noncore activities like payment services, customer services, and administration, then it is referred to as BPO. A call center can be identified as the voice-based part of a BPO organization. [2]

A Call Center (CC) is defined as a Place where contacts are made and received and it is often the front door to a business where most crucial customer interaction takes place. It is a work environment in which the main business is conducted via the telephone whilst simultaneously using computer screen. The Call Center Work is characterized by fewer opportunities for variation in work task and longer working shifts in front of computers lead to long continuous sedentary work with little variation and it has been shown to be associated with musculoskeletal disorders. [3]

Most call center workers work at times when they would normally be sleeping, this could challenge the individual's circadian rhythm because the sleep-wake internal clock setting is at odds with sleep wake cycle of the shift schedule ultimately resulting in circadian rhythm sleep disorder. [4]

Various studies have reported a wide range of physical ailments among call center workers. Backache, shoulder pain, digestive problems, overweight, headache due to eye strain and dryness of eyes were some of the commonly reported ailments. According to a study in Mumbai, 70.4% females and 55.6% males were found to be suffering from headache almost every day. Women-centered studies like the one conducted by Associated Chambers of Commerce and Industry of India (ASSOCHAM) reported high blood pressure (60%) accompanied by sleep disorders (60%), menstrual-related problems (50%), respiratory illness (45%), and digestive problems (50%) to be the major health-related problems among women. [5-7]

The present study was done to determine the prevalence of various health problems especially musculoskeletal disorders and the associated factors among call center workers in.

MATERIALS AND METHODS

A. Study Design: Cross sectional design was adopted to study the prevalence of Occupational Health Problems of the Call Center workers in India.

B. Subjects: The Call Center Workers (N=122) working in the private Information Technology Enabled Service Industries located at three call centers of Mumbai, India formed the population of this study.

C. Inclusion Criteria: The criterion for including the samples in to this study includes: Age (i.e. 25-40 years), duration of working hours (at least 4 hours a day or 20 hours per week) and those who are willing to participate in the study. Throughout the study, care was taken to protect anonymity of the Participants' Personal details.

D. Methodology: A Questionnaire was designed by keeping in view of the nature of call center work and its work-related potential health hazards to capture major health outcomes (i.e. Physical, Mental and psychosocial Health problems). With respect to the Musculoskeletal Health Problems, only the primary musculoskeletal complaints of the

subjects were taken into consideration for the purpose to this study. Questionnaires were distributed to 122 participants covering all three call center units with 41, 41 and 40 subjects recruited from each.

All the data was analysed with SPSS software ver. 17 using appropriate statistical tests. P-value of less than 0.05 was taken as significant.

RESULTS

Mean age of study subjects was 23.4 years with two third of the subjects being males (table 1). Most common health problem associated with call center workers was irritated mood (67.2%), musculoskeletal problems (62.3%), visual problems (58.2%) and sleep disturbances (32.8%). Other health issues include GIT, headache and ENT problems (table 2). Most common musculoskeletal problems were neck pain (35.2%) followed by backache (25.4%), wrist pain (23.8%) and shoulder pain (18.9%) respectively (table 3). Musculoskeletal problems were significantly associated ($p < 0.05$) with time spent on computer screen, duration of job and availability of ergonomic furniture at the work place like cushioned chair, soft keypad, palm rest, etc. (table 4).

DISCUSSIONS

We studied health and musculoskeletal problems among professionals working in computer-related fields in Mumbai. Nearly two third of the respondents had musculoskeletal problems. Magnitude of problem was found to be directly related to average computer hours per day and increased job duration. Musculoskeletal problems were seen less in persons using ergonomic furniture.

Musculoskeletal health problems over the past one month was reported by 62.3% workers. This result is in conformance with the findings of earlier studies done by Bhuyar et al [8] and Sharma et al. [1] who demonstrated that physical health problems in the form of musculoskeletal disorders were common among the Call Center Workers. One explanation for these findings is that the call center operators use computers interactively during telephone calls when facing time pressure and direct performance monitoring. Repetitive movements of upper extremities and prolonged constrained static sitting postures contributed to physical discomfort experienced by Computer workers. These risk factors along with the above pressures may increase the risk of physical discomfort.

Specifically, Low Back Pain is the most frequently reported Physical health Problem among the samples of this present study. Such result is in accordance to the findings of the previous study done by Barbara Charbotel et al. [9] who demonstrated that the most frequently reported symptoms in the Call Center workers was Neck Pain followed by Upper limb problems. Several risk Factors are contributing to this difference in prevalence of musculoskeletal problems among the call center

Workers which include: work station environment, degree of mobilization and levels of constrained posture, awareness levels and practices of workers regarding computer ergonomics. [1]

The study results for visual health problems (58.2%) are consistent with the study conducted by Sharma et al. [1]. Headache encountered in our study was 23% which is concordant with an earlier study by Bhatt. [12]

CONCLUSIONS

Nearly two third of the call center workers we studied had some computer-related health problems. This is a significant proportion and denotes that the occupational health of the people working in call centers should be emphasized as a field of concern in public health. The ergonomics of the working environment of the computer professionals have a direct impact on their well being. Hence the organizations employing them, as well as the professionals themselves need to be sensitized regarding the importance of the regular health checkups and proper working conditions with the help of various sources of information such as internet, seminars, and lectures .

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APPENDICES

Table 1: Age and Gender Distribution of Call Center Workers

Variable (n-122)		N	%
Sex	Female	43	35.2
	Male	79	64.8
Age (years)	< 20	33	27
	20-25	51	41.8
	25-30	27	22.1
	> 30	11	9

Table 2: Distribution of Call Center Workers Based on Various Health Problems

Health Problems (n-122)	N	%
Musculoskeletal Problems	75	61.5
Visual Problems	71	58.2
Irritated Mood	82	67.2
Sleep disturbances	40	32.8
GIT Problems	29	23.8
Headache	28	23
Ear Problems	12	9.8

Table 3: Distribution of Call Center Workers Based on Musculoskeletal Problems

Musculoskeletal Problems (n-122)	N	%
Wrist Pain	29	23.8
Shoulder pain	23	18.9
Backache	31	25.4
Neck pain	43	35.2

Table 4: Various Factors Associated with Musculoskeletal Problems

Associated Factors		Musculoskeletal Problems (n-122)						p-value
		Yes		No		Total		
Time spent on Computer Screen (per day)	< 6 hours	10	37.0%	17	63.0%	27	100%	< 0.05
	≥ 6 hours	65	68.4%	30	31.6%	95	100%	
Job Duration	< 2 years	43	49.4%	44	50.6%	87	100%	< 0.05
	≥ 2 years	32	91.4%	3	8.6%	35	100%	
Ergonomic furniture	Yes	36	44.4%	45	55.6%	81	100%	< 0.05
	No	39	95.1%	2	4.9%	41	100%	

