Original Research Article

Evaluation of the quality of sleep-in business processing and outsourcing employees in Delhi and national capital region

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Abstract

Background: Call centres are relatively newer business. Long work hours in call centres by employees result in significant mental and physical stress. This could result in disturbance of sleep. **Aim:** To evaluate quality of sleep in call centre employees **Methods:** It was a cross-sectional study done at a call centre location in Delhi NCR. A total of 300 call centre employees were selected and their consent to participate in study was taken. A semi structured pro forma was used for getting personal and demographic data. Pittsburg's Sleep Quality Index (PSQI) was used to assess quality of sleep. **Results:** Our study had most participants of male sex and most were of age less than 30. Our study found no significant difference in quality of sleep if gender, age or marital status was considered. We found that commute time was significantly associated with deterioration of sleep quality.

Keywords: BPO employees, Sleep Quality, PSQI, Call center employees.

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INTRODUCTION

Business Processing and Outsourcing or Call centers are relatively newer phenomenon. The technology enables telephone service representatives to deal quickly and remotely with customer needs by connecting the representative to the customer's account information on his/her computer as the call is relayed to the headset. As call centers can be centralized in locations far from the customers of a business, they allow firms to cut costs by reducing the number of local service outlets.

Call Centers are characterized by-

- Employees being engaged in specialist operation which combine telecommunications and information systems technologies
- Their work is controlled by automatic systems which virtually simultaneously distribute work, control the pace of that work and monitor their performance
- They are in direct contact with the customer through dealing with in-bound calls, making out-bound calls or a combination of the two.

India has one of the largest pool of low-cost English speaking scientific and technical talent.

Call centre agents earn more than most of their peers in other industries but many of them have to pay a price for these gains. Long working hours, long travel time to reach, pressure of targets, work timing according to countries of parent companies, workload, repetitive nature of work, insufficient holidays, psychosocial factors sometimes due to rude or abusive clients etc result in mental stress to a BPO employee. Stress results in poor work performance, toll on mental health, physical symptoms and sometimes disturbance in sleep. The sleep is affected in quantity as well as quality. Sleep quality is defined as one's satisfaction of the sleep experience, integrating aspects of

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sleep initiation, sleep maintenance, sleep quantity, and refreshment upon awakening. Sleep quality is a vital construct to clinicians and researchers due to the high prevalence of disturbed sleep and insomnia, and the clear relevance of sleep quality to optimal health and functioning. Yet, despite its common usage, "sleep quality" is a term without a clear definition (Krystal and Edinger, 2008)[1]. G. Bhuvaneswari *et al.*[2] studied quality in sleep in call handlers in a call centre. The study found that burden of sleep disturbance was higher in those working in a call centres. Call centre employees have to compromise upon their sleep owing to the contemporary work settings in call centres.

Aims: The study was done to find out quality of sleep in BPO employees.

MATERIAL AND METHODS

The study was a cross-sectional study done at an international call centre at Delhi and national capital region. The 300 study participants were chosen by random sampling method. Pittsburg's sleep quality index (PSQI) was used to assess sleep quality in study participants after taking proper consent. The PSQI was developed at University of Pittsburgh by Buysse.D.J., Reynolds,C.F. 3rd, Monk T.H. *et al.*[3] in 1989. It not only measures the quantity of sleep but also latency and quality of sleep. It is a self-rated questionnaire which assesses sleep quality and disturbances over a 1-month time interval. Nineteen individual items generate seven "component" scores: subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbances, use of sleeping medication, and daytime dysfunction. The sum of scores for these seven components yields one global score. A semistructured pro forma was used to get demographic details of study participants.

RESULTS

The study was conducted at BPO unit of Delhi NCR region in collaboration with Department of Psychiatry, Santosh Medical College and Hospitals, Ghaziabad. The study sample consisted of a total of 300 subjects who gave proper consent to be included in the study. Out of the 300 subjects 219 were male and 81 were females.

Table 1: Sex wise distribution

Male	Female	Total
219	81	300

Majority of subjects in study were in the age group 18-29 years, a total of 67% of sample was in 18-29 year age group and only 33% were in >30 years age group

Table 2: Distribution age wise

Age group(yrs)	Male	Female	Total
<30	132	69	201
	(65.7%)	(34.3%)	(100%)
>=30	87	12	99
	(87.9%)	(22.1%)	(100%)

Out of the 300 subjects included in study 162 were married and 138 were unmarried.

Table 3: Distribution according to marital status and age

Marital status	<30 yrs	>=30 yrs	Total
Married	81	81	162
	(50%)	(50%)	(100%)
Unmarried	120	18	138
	(87%)	(13%)	(100%)

PSQI data: PSQI data were collected for all 300 study participants.

Table 4: Comparison of Gender with PSQI global value

Sex	PSQI<= 5	PSQI> 5	TOTAL
Male	153	66	219
	69.9%	30.1%	100.0%
Female	51	30	81
	63.0%	37.0%	100.0%
TOTAL	**204**	**96**	**300**
	68.0%	**32.0%**	**100.0%**

P> 0.05

Table 5: Age wise distribution of PSQI global score

Age Group	PSQI< 5	PSQI>= 5	TOTAL
<30	132	69	201
	65.7%	34.3%	100.0%
>=30	72	27	99
	72.7%	27.3%	100.0%
TOTAL	**219**	**81**	**300**
	68.0%	**32.0%**	**100%**

p > 0.05

Table 6: Comparison of Marital status with PSQI global value

	PSQI<= 5	PSQI> 5	TOTAL
Married	111	51	162
	68.5%	31.5%	100.0%
Unmarried	93	45	138
	67.4%	32.6%	100%
TOTAL	204	96	300
	68.0%	32.0%	100.0%

p value> 0.05

Table 7: Comparison of commute time with PSQI global value

Commute Time	PSQI<= 5	PSQI> 5	TOTAL
<1 hour	78	30	108
	72.2%	27.8%	100.0%
Between 1 and 2 hours	78	24	102
	77.8%	22.2%	100.0%
>2 hours	42	42	84
	50.0%	50.0%	100.0%
TOTAL	**204**	**96**	**300**
	68.0%	**32.0%**	**100.0%**

p value< 0.001

Table 8: Comparison of Residential Status with PSQI global value

Residence and Family Type	PSQI<= 5	PSQI> 5	TOTAL
Non Hostel	183	93	276
	66.3%	33.7%	100.0%
Hostel	21	3	24
	87.5%	12.5%	100.0%
TOTAL	**204**	**96**	**300**
	68.0%	**32.0%**	**100.0%**

p value< 0.05

Table 9: Comparison of Family structure with PSQI global value

Family Type	PSQI<= 5	PSQI> 5	TOTAL
Joint Family	84	48	132
	63.6%	36.4%	100.0%
Nuclear Family	99	45	144
	68.8%	31.3%	100.0%
TOTAL	**183**	**93**	**276**
	66.3%	**33.7%**	**100.0%**

p value > 0.05

DISCUSSION

A study of 300 randomly selected participants of a leading BPO in Delhi NCR region was done with aim to find out nature and extent of stress in BPO employees.

Demographic Details

Age and Gender wise distribution: The age group of respondents varied from 18 to 49 years. Majority of subjects in the study were less than 30 years of age, a total of 67% of the sample was in 18-30 years age group and only 33% were above 30 years of age. Of the total sample 201 were male and 99 were female. Reason for younger population being part of this industry could be that BPO sector has been a recent phenomenon.

Marital Status:

Out of the 300 subjects included in study 162 were married and 138 were unmarried.

Residential Status and Type of Family:

Majority of subjects in study (n=276) were residing in Non Hostel facility, of these144 were staying in Nuclear Families and 132 were from Joint Family. Of the total study sample only 8% were staying in hostel.

Sleep and Social Demographic variables

Variation on basis of Gender and Age:

Quality of sleep was not found to be affected by either gender or age.

This finding doesn't agree with Shu Hui Cheng, Chi-Chen Shih's[6]

study on the sleep quality of 2360 university students in 2011 which found 54.7% students classified into the poor sleep quality group, as defined by a PSQI score ≥ 6. Based on the results of multivariate logistic regression analysis, they found poor sleep quality to be significantly associated with female gender .

Variation on basis of Marital Status:

No significant correlation could be found between quality of sleep and marital status .

Variation on basis of Commute Time

Employees spending more than 2 hours in commuting had significantly higher (50.0%) problems with quality of sleep compared to 27.8% of those travelling for less than 1 hour. ($p< 0.001$). Mathias Basner, Kenneth M. Fomberstein[4] in their survey done from 2003-2005 on relationship of sleep time to waking activities using the American Time Use Survey (ATUS) had observed largest reciprocal relationship of sleep to work time, followed by travel time, which included commute time. Our findings show strongly significant correlation between quality of sleep and time spent on commuting. We propose that this finding should be researched further.

Variation on basis of Residential Status:

Employees residing in hostel had significantly lesser problems regarding quality of sleep as compared to those staying in non hostel facility (p value<0.05).

Our results are opposite to the findings of the study by A. O. Okunbor, E.O. Agwubike (2010)[5] which investigated the influence of sleep deprivation on lifestyles of 250 students in tertiary institutions located in Edo State of Nigeria. They found that majority of these students staying in hostel experienced sleep deprivation due to noisy surroundings and also lights being switched on at bedtime (86.5% and 88.5% respectively). Also, they affirmed that hostel rooms were not well ventilated so as to allow sound sleep. We found that students staying in a hostel had better quality of sleep than those staying at home. However, our study didn't specify the type of hostel and whether it was single occupancy or with room mates. Further study needs to be done on the Residential Status in BPO employees and its affect on various parameters of sleep.

Variation on basis of Family Structure:

No difference was found on the quality of sleep on the basis of employees' stay in joint or nuclear family.

This finding doesn't agree with study done by Shu Hui Cheng, Chi-Chen Shih's *et al.*[6] on the sleep quality of 2360 university students which found 54.7% students classified into the poor sleep quality group, as defined by a PSQI score ≥ 6. Based on the results of multivariate logistic regression analysis, they found poor sleep quality to be significantly associated with female gender and poor social support. The difference observed in our study can be explained on the basis of the fact that our study was done on BPO workers as compared to university students. The interaction of workers with family would be deemed to be lesser as compared to university students.

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