A Study to Evaluate Nature and Extent of Psychiatric Morbidity in Business Processing and Outsourcing Employees in Delhi and National Capital Region

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ABSTRACT

BACKGROUND

Stress is commonly seen in BPO employees. A number of factors contribute to stress in BPO employee like long working hours, pressure of work, work time, insufficient holidays, travel time, repetitive nature of work etc. India is one of favourable site for BPO industry because of twelve hour time difference between India and most of USA cities. The study was done to find out nature and extent of psychiatric morbidity in BPO employees in Delhi and NCR.

METHODS

The study was done in two phases. In phase 1 GHQ12 (General Health Questionnaire) was applied to 300 BPO employees who were selected randomly. Those BPO employees who scored 12 or more on GHQ12 were assessed with Beck Depression Inventory (BDI) and Beck Anxiety Inventory (BAI). Data was collected on Microsoft excel and chi square test was used to assess association between variables.

RESULTS

The data was collected and assessed using appropriate statistical methods. The study revealed out of 300 participants 219 were males and 81 were females. Most participants were of less than 30 age. Out of 300 participants 81 scored 12 or more on GHQ12 scale. In phase 2, out of 81 participants 58.2 % males and 80 % females scored 9 or more on BDI, while there was no significant difference on BAI scores. The perceived stress was more in females compared to males.

CONCLUSIONS

The study revealed that stress is very common in BPO employees. Those who are married, stay with joint family had lesser perceived stress compared to single or those in nuclear families. Females are more prone to develop stress compared to males. The risk of depression too was more in females (80%) compared to males. Anxiety symptoms were more in those staying in nuclear families as compared to those staying in joint families.

KEYWORDS

BPO, Psychiatric Morbidity, Call Centre Employees

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BACKGROUND

Business Processing and Outsourcing units are relatively newer industries. The industry uses telecommunication and information and technology in providing services. In BPO the call service provider deal with customer needs by sitting remotely sometimes even in different country. The service provider usually assesses the customer information on computer screen and the information is provided by telephone headsets. The broadest definition in the call centre literature is that provided by Norling, who states "a call centre is any communications platform from which firms deliver services to customers via remote, real-time contact". India has become one of largest player in BPO business. This has become possible mainly because of large size of young population in India. Majority of this young population is skilled or semiskilled and are able to speak well in English. The young population is ready to work at low cost compared to their western counterparts. This has attracted many multinational companies. In 1980 American Express consolidated their Asia Pacific and Japan office in Gurugram region. This resulted in start of business processing and outsourcing business in India. Later many multinational companies shifted their outsourcing business in India. By 2012 about 2.8 million people were working in BPO industry in India. In India more than 2.5 million people graduate per year, and this is really a large population. A large number of this population work in BPO industry. The BPO industry generates more than 11 billion USD revenue per year which is about 1 % of GDP of India. The wages of BPO service provider are raising at 10 - 15 % rate. Over the years the industry grew rapidly and is still growing. Tier 1 cities like Delhi NCR, Gurugram, Noida, Chennai, Hyderabad, Bengaluru, Pune etc. are locations where the most of BPO industries work. They are now shifting to tier 2 cities too, like Chandigarh, Panchkula, Mohali, Ahmedabad, Nagpur, Bhopal, Jaipur, Vizag etc. If we compare global size of BPO industry then the industry generates about 120 - 150 billion USD per year and India has about 5 – 6 % of share in this. Considering the size of young Indian population who are able of speak English and are skilled, there are projections of rapid growth in BPO industry in coming years. India has emerged as world leader in outsourcing industry mainly because of information and telecommunication technology based outsource services in the form of call centres. India's success in building call centres of multinational companies is dependent upon a number of factors:

1) Favourable time zones
2) Large size of skilled population
3) Huge investments in infrastructure in building BPO industries and related policies by government.

Factors Causing Stress in BPO Industry

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. A lot of factors result contribute to stress in BPO worker like Long working hours, odd time of work, time taken to reach to office which are mostly in outskirts, work load, same and repetitive nature of work, insufficient holidays, pressure to meet targets, psychological factors etc.

A Transversal Study by Charbotel B, Croidieu S et al[1] titled Working conditions in call-centres, the impact on employee health: a transversal study. Part II. Assessed the impact of telephone call centre employees' working conditions on health by identifying at-risk employment situations. The study found a significant association between psychological distress and frequency of musculoskeletal disorder. The study found that the psychological distress and musculoskeletal disorders were significantly greater in workers with job strain. This survey was done on over 2,000 call centre employees and it found the high frequency of psychological distress in this population and the health impact of working conditions.

Gözde Yilmaz, Aşkin Keser[2] in their study call center work from employer and employee perspective on 101 call centre agents working for a Turkish commercial bank in 2006, measured the burnout level and its relation with job satisfaction. "Burnout" among call centre employees was found to be an important variable which explained "job satisfaction".

Objectives

1. To determine the proportion of psychiatric morbidity among the study subjects.
2. To determine the depression and anxiety among those with psychiatric morbidity.
3. To assess the association of various socio-demographic probable risk factors with psychiatric morbidity, depression and anxiety.

METHODS

The study was done in two phases at an International call centre site in Delhi National Capital Region. It was a prospective cross-sectional study done at Santosh Medical College Ghaziabad from May 2015 to September 2015. The study enrolled a total of 300 BPO employees of both sexes from total of about 1250 employees from that particular call centres site. Adopting a criterion based sampling, selection of subjects were done in multiple stages. The criterion adopted was to obtain a score of 12 or more on GHQ 12. Among those who qualified in the first stage, adopting simple random sampling, 300 BPO employees were randomly selected using lottery method. Considering stress as the psychiatric morbidity, with 95% confidence interval a sample size of 266 was calculated using the formula $n = z^2(pq/d^2)$, where, z = 1.96 at 95 % confidence interval, p = 46.7 % (estimated prevalence of stress among BPO employees in NCR Delhi in a previous study),[3] q = 100-p (53.3 %) and d = absolute precision (6%). Considering 10% of non-response, a total of 293 was obtained which was rounded off to 300. In phase 1 GHQ12 (General Health Questionnaire 12) was given to participants after taking proper consent and giving them detailed information about scale. In phase 2 those participants who scored 12 or more on GHQ12 were evaluated with Beck's Depression Inventory

(BDI) and Beck's Anxiety Inventory (BAI). The data was drawn on Microsoft excel and chi square test was used to find association between variables.

GHQ 12 is one of most The General Health Questionnaire-12 (GHQ-12) is one of the most unique and extensively used self-report instruments for evaluating psychological disorders and strains. GHQ was formulated by Goldberg[4] in the 1970's and noted for being a reliable measure of mental health. GHQ-12 is one of the most commonly used because of its ease of use. The GHQ-12 self-reported questionnaire includes 12 items, each of which is assessed through 4 indexes. Two of the most common types of scoring includes Likert scoring technique (0–1–2-3) and the bi-modal (0–0–1-1). The GHQ-12 tends to have good specificity, reliability, and reasonably high sensitivity.

The Beck Depression Inventory (BDI) is a 21-item, self-report rating inventory that measures characteristic attitudes and symptoms of depression (Beck, et al., 1961).[5] The BDI takes approximately 10 minutes to complete, although clients require a fifth – sixth grade reading level to adequately understand the questions.

The Beck Anxiety Inventory (BAI) too is a 21-item, self-report rating inventory that measures symptoms of anxiety. The BAI was moderately correlated with the revised Hamilton Anxiety Rating Scale (.51), and mildly correlated with the Hamilton Depression Rating Scale (.25) (Beck et al., 1988).[6]

The data was collected and entered on Microsoft excel and the association between categorical variables with psychiatric morbidity, stress and anxiety were assessed using chi-square test of significance and the data was analysed in SPSS version 18.0. A P-value of less than 0.05 was considered as statistically significant.

RESULTS

A total of 300 participants were enrolled for study. Out of 300 participants, majority i.e., 67.0% belonged to age group less than 30 years, 219 (73. %) were males, 162 (54.0 %) were married and belonged to nuclear family (56.0 %). [Table-1]. On screening for any mental illness using GHQ-12 in phase-1, 81 i.e. 27.0% were applied with Beck's anxiety and depression inventory scale. Majority were females (56.0 %), were unmarried (56.0 %) and belonged to nuclear family (63.0 %) among those who scored more than 12 on GHQ-12.

Among the study subjects who were applied with BDI scale, 57 (71.0 %) were positive for depression and 39 (76.4 %) had anxiety cut-off score more than 7. The higher proportions of females (55.6 %), unmarried (32.6 %) and those who lived either in nuclear family or hostel (35.4 %) had significant association with the occurrence of psychiatric morbidity as screened positive with GHQ ≥12 [Table-2]. The proportion of females (80.0 %) and unmarried women (80.0 %) were significantly higher among those who were screened positive for depression (BDI ≥ 9) and the proportion of those who belonged to nuclear family were significantly higher among those who were screened positive for anxiety (BAI ≥ 7) (P < 0.05). However, there was no statistically significant association between type of family with depression scale and gender and marital status with anxiety scale (P > 0.05). [Table-3 & Table-4]

	Variables	Frequency (n)	Percentage (%)
Age-group in years	< 30	201	67.0
	≥ 30	99	33.0
Gender	Males	219	73.0
	Females	81	27.0
Marital Status	Married	162	54.0
	Unmarried	138	46.0
Type of family	Nuclear	168	56.0
	Joint	132	44.0

Table 1. Socio-Demographic Profile of the Study Subjects

	Variables	GHQ <12	GHQ ≥12	X^2-Value (P-value)
Gender	Males	183 (83.6 %)	36 (16.4 %)	45.91
	Females	36 (44.4 %)	45 (55.6 %)	(<0.0001)*
Marital Status	Married	126 (77.8 %)	36 (22.2 %)	4.08
	Unmarried	93 (67.4 %)	45 (32.6 %)	(0.04)*
Type of Family	Nuclear	93 (64.6 %)	51 (35.4 %)	5.35
	Joint	102 (77.3 %)	30 (22.7 %)	(0.02)*

Table 2. Association of Various Socio-Demographic Factors with Psychiatry Morbidity on GHQ

*indicates significant statistical association at P<0.05

	Variables	BDI <9	BDI ≥9	X^2-value (P-value)
Gender	Males	15 (41.7 %)	21 (58.3 %)	4.50
	Females	9 (20.0 %)	36 (80.0 %)	(0.03)*
Marital Status	Married	15 (41.7 %)	21 (58.3 %)	4.50
	Unmarried	9 (20.0 %)	36 (80.0 %)	(0.03)*

Table 3. Association of Gender and Marital Status with Depression Scale

*indicates significant statistical association at P<0.05

	Variables	BAI <7	BAI ≥7	X^2-value (P-value)
Type of Family	Nuclear	21 (41.2%)	30 (58.8%)	6.29
	Joint	21 (70.0%)	09 (30.0%)	(0.01)*

Table 4. Association of Type of Family with Anxiety Scale

*indicates significant statistical association at P<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. In phase 1 all the employees were given General Health Questionnaire12 (GHQ12) to know if they had any subjective distress/ psychiatric morbidity. In phase 2, only those employees scoring > 12 on GHQ-12 were included. They were given Beck's Depression Inventory (BDI) and Beck's Anxiety Inventory (BAI). Statistical analysis was carried out on the data collected from BPO employees is showed in the proceeding tables.

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 these 144 were staying in Nuclear Families and 132 were from Joint Family. Of the total study sample only 8 % were staying in hostel.

Psychiatric Morbidity and Social Demographic Variables

It was observed that of the 300 employees, 81 (27 %) of the employees had scores greater than 12, corresponding to possible psychiatric morbidity. Our results are in tandem with the findings of research work done by Lasfargues et al. (France, 2003)[7] on 1,002 mass retail workers. While assessing their mental health status, they had found that 25 % of the workers had Likert scores greater than 12 on GHQ-12.

Variation on the Basis of Gender

Significant difference in GHQ-12 score was seen on the basis of gender. Psychiatric Morbidity was seen in 55.6 % of female employees as compared to 16.4 % of male employees. ($p < 0.001$). Our findings are in concurrence with findings of Jenkins et al (2009) which had found that the rates of psychiatric morbidity were more prevalent in women (19.5 %) compared to men (12.3 %) in Britain. Our findings are also in accordance of Aline Drapeau, Dominic Beaulieu-Prévost's[8] findings which had suggested that there was higher level of psychological distress observed in women in their research named 'A life-course and time perspective on the construct validity of psychological distress in women and men'. This is however in contrast to the findings by Romanov K, Appelberg K, Honkasalo ML[9] of Department of Public Health, University of Helsinki, Finland (1996) who had found out that psychiatric morbidity didn't vary on the basis of gender in their research titled 'Recent interpersonal conflict at work and psychiatric morbidity: a prospective study of 15,530 employees aged 24-64'. Our findings show strongly significant higher psychiatric morbidity in female employees as compared to their male colleagues.

Variation on Basis of Age

There was no significant correlation found between psychiatric morbidity and age of the employees.

Variation on Basis of Marital Status

According to the marital status, it was found that 32.6 % of unmarried respondents reported psychological distress as compared to 22.2 % of married ones ($p < 0.05$). This is in agreement with previous study by Romans-Clarkson SE, Walton VA, Herbison GP, Mullen PE.[10] titled 'Marriage, motherhood and psychiatric morbidity in New Zealand' which had found that married and widowed subjects showed lower rates of psychiatric morbidity than the never married and childless. Our findings found significantly higher psychological morbidity in unmarried population as compared to married counterparts. This may indicate towards marriage being a protective factor against psychiatric morbidity.

Variation on Basis of Family Structure

Psychiatric morbidity was seen significantly more (p value < 0.05) in employees staying in nuclear families (35.4 %) as compared to those (22.7 %) staying in the joint family. Johnson JV, Hall EM (1988)[11] in their work on Swedish working population had found that social support at work positively influenced mental health of employees. They found that lack of support aggravates stressful experience whereas its presence buffers health-adverse effects. Our finding is in accordance with findings of Sethi BB, Chaturvedi PK (1985)[12] and Bharat S[13] (1991), who had found that the nuclear family structure was more likely to be associated with psychiatric disorders than the joint family. This may indicate to joint family being a protective factor against psychiatric morbidity.

Depression and Social Demographic Variables

Variation Based on Age

There was no significant correlation observed between depression and the age of the employee. Our findings are not in agreement with Dong Hoon Oh, Shin Ah Kim[14] in their study titled Prevalence and Correlates of Depressive Symptoms in Korean Adults: Results of a 2009 Korean Community Health Survey who had found that the prevalence of depressive symptoms in age group 19-29 yr was significantly higher than in age group 30-39 yr. ($P < 0.001$).

Variation Based on Gender

In our research we observed that while 80 % of female employees had depression, it was seen in 58.3 % of male employees (p value < 0.05). These findings are in agreement with Dong Hoon Oh, Shin Ah Kim's study who found that women had a significantly higher prevalence of both depressive symptoms and definite depression than men ($P < 0.001$).[14]

Variation Based on Marital Status

According to the marital status it was observed that depression was found to be more (80 %) in unmarried respondents as compared to 58.3 % of married employees (p value < 0.05).

Anxiety and Social Demographic Variables

Variation Based on Age, Gender, Marital Status and Religion

No difference in the anxiety level could be seen on the basis of age or gender or marital status or religion of the employees.

Variation Based on Family Structure

There were more anxiety symptoms seen in employees staying in nuclear family. While 58.8 % of employees staying in nuclear family had scored above cut off (i.e., 7) on BAI, it was seen in only 30 % of those staying in joint family (p value < 0.05). This again agrees with our earlier finding during the screening stage which had shown that psychiatric morbidity is more in employees staying in nuclear families.

CONCLUSIONS

Psychological stress is common in BPO employees. Females are more at risk of developing stress compared to males. 55.6 % of females employees had some form of psychiatric morbidity compared to 16.5 % of male employees. Risk of depression and anxiety are seen in BPO employees. Risk is more in females compared to males. Those who stay in nuclear families and are younger had more stress. Psychiatric morbidity was seen significantly more in employees staying in nuclear families (35.4 %) as compared to those (22.7 %) staying in joint family. About 80 % of female employees had depression while it was seen in 58.3 % of male employees. Anxiety symptoms were seen more in employees staying in nuclear families (58.8 %) as compared to those staying in joint family (30.0 %).

Data sharing statement provided by the authors is available with the full text of this article at jebmh.com.
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REFERENCES

[1] Charbotel B, Croidieu S, Vohito M, et al. Working conditions in call-centres, the impact on employee health: a transversal study. Part II. Int Arch Occup Environ Health 2009;82(6):747-756.
[2] Yilmaz G, Keser A. Call centre work from employer and employee perspective: two field studies from Turkish banking sector. The Journal of Industrial Relations and Human Resources 2006;8(2):22-35.
[3] Jeyapal DR, Bhasin SK, Kannan AT, et al. Stress, anxiety, and depression among call handlers employed in international call centers in the national capital region of Delhi. Indian J Public Health 2015;59(2):95-101.
[4] Goldberg DP, Gater R, Sartorius N, et al. The validity of two versions of the GHQ in the WHO study of mental illness in general health care. Psychol Med 1997;27(1):191-197.
[5] Beck, AT, Ward CH, Mendelson M, et al. An inventory for measuring depression. Arc Gen Psychiatry 1961;4:561-571.
[6] Beck AT, Epstein N, Brown G, et al. An inventory for measuring clinical anxiety: Psychometric properties. J Consult Clin Psychol 1988;56(6):893-897.
[7] Lasfargues G, Levery G, Charlanes D. Santé mentale et travail dans la grande distribution en région Centre. Tours: Institut de Médecine du Travail du Val de Loire Rapport 2003.
[8] Drapeau A, Beaulieu-Prévost D, Marchand A, et al. A life-course and time perspective on the construct validity of psychological distress in women and men. BMC Medical Research Methodology 2010;10(1):1-6.
[9] Romanov K, Appelberg K, Honkasalo ML. Recent interpersonal conflict at work and psychiatric morbidity: a prospective study of 15,530 employees aged 24-64'. J Psychosom Res 1996;40(2):169-76.
[10] Romans-Clarkson SE, Walton VA, Herbison GP, et al. Marriage, motherhood and psychiatric morbidity in New Zealand. Cambridge University Press: 09 July 2009.
[11] Johnson JV, Hall EM. Job strain, work place social support, and cardiovascular disease: a cross-sectional study of a random sample of the Swedish working population. Am J Public Health 1988;78(10):1336-1342.
[12] Sethi BB, Chaturvedi PK. A review and role of family studies and mental health. Indian J Soc Psychiatry 1985;1:216-230.
[13] Bharat S. Research on family structure and problems: review, implications and suggestions. In: Bharat S, ed. Research on families with problems in India: issues and implications. Vol 1. Bombay: Tata Institute of Social Sciences 1991:33-67.
[14] Oh DH, Kim SA, Lee HY, et al. Prevalence and correlates of depressive symptoms in Korean adults: results of a 2009 Korean community health survey. J Korean Med Sci. 2013;28(1):128-135.