



## Prevalence of Tobacco Among Business Process Outsourcing (BPO) of North India: KAP Study

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### Abstract

**Introduction:** Business Process Outsourcing (BPO) industry has been rapidly expanding in India over the last 10 years. While employment in the business process outsourcing (BPO) sector has meant that young adults are reaching their career milestones and financial goals much earlier than before, surveys show that Business Process Outsourcing (BPO) employees face steady challenges at work that can be chronically stressful. The present study aims to highlight the ill effect of tobacco and its uses by BPO workers.

**Methodology:** A cross sectional study was done on 993 B.P.O workers, using a 12 variable questionnaire through emails, telephone and interview. Descriptive statistics was done and chi square test was applied keeping  $p < 0.05$ .

**Result:** The prevalence of use of tobacco was found to be 57%. Most of the employee had a history of tobacco smoking, with majority of participants falling in age group of 20-30 years

**Conclusion:** BPO employees have to work in shift for continuous hours leading to stress and unhealthy life style, specially smoking. Healthy life style and destressing method should be encouraged among them.

**Keywords:** Tobacco; Business Process Outsourcing (BPO); Tobacco Users; Oral Health; Call Centre

### Introduction

The Business Process Outsourcing (BPO) industry has been rapidly expanding in India over the last 10 years [1]. While employment within the business process outsourcing (BPO) sector has meant that young adults are reaching their career milestones and financial goals much before [2], surveys show that Business Process Outsourcing (BPO) employees face steady challenges at work that can be chronically stressful. Centers in India are both domestic and international, but the prominence arises in transnational call centers wherein the clients are from developed countries like USA, UK, and elsewhere [3]. Due to the difference in time zones between India and such countries, most work is performed during night hours corresponding to a time suitable to their international customers. Such erratic work timings are often called "graveyard shift" or "UK-USA shift" by few researchers [4]. They deal with the

pressure to meet certain metrics and daily quotas, along with managing an unnatural night-shift biological time-frame. The habits they develop to adapt to those stressors can cause long-term health issues. The main culprits can be pointed to constantly changing work schedules, the tendency to rely on 24/7 fast food chains and instant noodles, and finally, the widespread smoking caffeine addiction [5]. Tobacco is a leading preventable cause of death, killing nearly six million people worldwide each year. Therefore, the present study aims to highlight the ill effect of tobacco and its uses by BPO workers.

### Methodology

The present cross-sectional study was done on 993 employees of call centers of North India to assess the from November 2019 to February 2020. Sample size of 385 was calculated on an estimated

population size of 10000, keeping a confidence interval of 95% and margin of error of 5% later increased to 1000, to increase the generalizability of the result, of which 993 responded to it. The questionnaire was filled by the investigator through personal interview telephone interview, mail and other social media. Simple random sampling was used. People willing to participate in the study were included whereas people who refused to participate in the study or couldn't comprehend the questions of the study were excluded. A verbal consent was obtained from the participating population. A 12 variable, structured, close ended questionnaire in English and Hindi was distributed to people through phone interview and e-mail. The questionnaire was made in English which was translated into Hindi and then again translated back to English to check the linguistic validity. The responses were kept anonymous and confidential to encourage honest responses. The questionnaire was reviewed and tested among 20 participants in order to ensure the reliability and validity of the questionnaire. The questionnaire was modified on the basis of the results of the pilot study. The data collected was entered and compiled using MS-Office Excel. Statistical analysis was done using SPSS version 20. Frequency, percentage was calculated. Chi Square test was applied. Statistical significance was kept at  $p < 0.05$ . Cronbach's alpha was found to be 0.83.

### Result

The study comprised of 993 BPO workers, of which 35.1% (349) were females and 64.8% (644) were males. Majority of population 73% (724) belonged to age group 20-30 years. The prevalence of use of tobacco was 57% (566). The maximum time period of working in the B.P.O was 49% (486) for more than 4 years and only 6% (53) for less than a year. The demographic data is shown in table 1.

- 66.8% (664) had shift duties while 32.9% (332) did not. 57% (566) of participants had tobacco dependence. The participant was more depended on smoking tobacco 53% (527), while 35.9% (357) were on chewing tobacco and used both forms.
- 2.9% (29) has been consuming tobacco since past 1 year, 39% (388) since past 3-5 years, 49% (487) has been consuming for 6-10 years and 8.9% (89) more than 10 years.
- The daily uptake of chewing tobacco was 57.2% (568) for 3-5 packets, 35.9% (357) for 5-10 years, 3.9% (39) for more than 10 packets and 2.9% (29) for 1-2 packets per day.
- 47.5% (472) participants had their first smoke after 5-30 minutes of waking up, 29.2 (290) 5-10 minutes after waking up, 23% (230) had after 30 minutes of waking up.
- 58.9% (585) admitted difficulty in refraining from smoking in public places while 41.1% (408) didn't face an such difficulty.

- 87.9% (864) of the participants hate to give up the morning smoke and only 13% (129) hate to give up the afternoon smoke.
- 68.7% of the participant smoked 11-20 cigarettes per day, 19% (189) smoked 1 per day, 6.9% (69) smoked 21-30 cigarettes per day and 5.9% smoked 31 or more per day.
- 62.1% (616) of females have problems with passive smoking while 37.9% (377) didn't.
- 63% (626) consumed tobacco either smoke or chewing even when they were sick where as 36.9% didn't use tobacco when unwell.

Age	Frequency	Percentage
20-30 years	729	73.4%
30-40 years	168	17%
40-50 years	96	9.6%
Gender	Frequency	Percentage
Male	644	64.9%
Female	349	35.1%
Highest qualification	Frequency	Percentage
High school	423	42.6%
Graduation	337	33.9%
Post graduation	233	23.5%

Table 1

The results were highly significant to shift workers of participants  $p < 0.05$  and age of the participants shown in table 2.

Questions	Gender	Year of working	Shift workers
Do you consume tobacco in any form?	0.3	0.02	0.03
Form of tobacco used.	0.08	0.07	0.08
Per day consumption.	0.07	1.0	0.06
how soon after waking do you smoke your first cigarette?	0.01	0.01	0.01
Do you find it difficult to refrain from smoking in places where it is forbidden? e.g. library, parks etc.	0.06	2.0	0.7
Which cigarette would you hate to give up?	0.25	0.01	0.01
how many cigarettes a day do you smoke?	0.01	0.01	0.01
Do you smoke more frequently in the morning?	0.04	0.75	0.01
Do you smoke even if you are sick in bed most of the day?	0.54	0.02	0.01

Table 2

## Discussion

Although much has been talked about the immense opportunities created by the BPOs in the developing countries, not much has been stated regarding the challenges faced by these organizations, particularly with reference to the health and questions of safety that are unique to the present new and developing sector. Addressing these issues and creating a healthy work environment would be a win-win situation for both employers and employees [6].

BPO is usually categorized as back-office outsourcing, which incorporates internal business functions, and front office outsourcing, which incorporates customer-related services. The employees at BPO center need to listen, watch, and speak simultaneously without any gap. Erratic working hours along with a sedentary job that demands sitting on a chair for long hours each day, reading prescribed conversations on the phone endlessly may result in musculoskeletal and psychologic strain. Long working hours, permanent night shifts, lack of social and family interactions, incredibly high work targets, loss of identity, coupled with high disposable income at a young age may predispose the BPO employees to different forms of dependence, including tobacco [6,7].

Despite numerous Health awareness campaigns, pictorial warnings on tobacco products, smoke-free policies, and the legislative measures adopted by the Government of India, the number of tobacco users is substantial in numbers [8].

The present study had a prevalence of 57% of the use of tobacco which was similar to the study done by tata memorial hospital where the prevalence was 60%. A telephonic survey of 646 BPO industry employees revealed 415 were current tobacco users and a prevalence of 49.5% in the male employees [6].

A few studies have been done on various categories of industrial workers in India with varying prevalence rates. M Parashar, *et al.* reported a prevalence of smokeless tobacco users of 49%, smokers 22%, and dual users 22% in a study in a sample of 172 male construction workers in Delhi. More than half of them were moderate to severely dependent on Nicotine [9]. Shoeeb Akram, *et al.* reported the prevalence of tobacco use among 134 wood and plywood workers in Mangalore to be around 53.7% of which 11.9% were smokers and 41.5% tobacco chewers [10]. Ansari, *et al.* surveyed a sample of 448 power loom workers of Allahabad (UP) and found a prevalence of smoking 62.28% and tobacco chewing of around

66.07% [11]. Nicotine dependence is one of the difficult addictions to be cured of. The quantification of nicotine delivered inside the body is not the same as the various tobacco products available in India and is a limitation of the assessment methodology available to us. The Nicotine content for a rod of cigarettes varied from 5.7mg to 13 mg and per packet of gutkha or khaini from 1.7 to 76.2mg [11]. the chances ratio for developing Nicotine dependence increased after five years of use in smokeless tobacco users in comparison to 10 years of smokers probably because of this reason. The higher prevalence of nicotine dependence in both smokers and smokeless tobacco users could be due to the fact that the tobacco users indulged in both forms to increase nicotine delivery due to tolerance and intense craving [7].

The age-standardized prevalence of smoking declined modestly among men aged 15–69 years, but absolutely the number of male smokers at these ages grew from 79 million in 1998 to 108 million in 2015. This is due to population growth offsetting modest declines in prevalence [12].

Rapid income growth over the last decade has possibly contributed to the shift in smoking from the less-expensive bidis to cigarettes. Price is the most important determinant of consumption. Relative to income, cigarettes, and bidis have become less costly in the last decade [13]. Moreover and most relevant for policy, India's complicated tax structure has kept overall taxes on cigarettes low relative to other countries, with particularly low taxes on the inexpensive, short cigarettes that compete with the bidi market [14-16].

A study in Kolkata by Jha, *et al.* (2012) [17] observed that 63% of employees had multiple addictions (smoking, chewing tobacco, alcohol, and other forms). As much as 56% of the "more than one pack-a-day" smokers whereas in our study it was observed 68.7%.

Tobacco smoke contains biologically significant concentrations of known carcinogens additionally as many other toxic chemicals. Some of these, including variety of tobacco-specific nitrosamines (particularly NNK and NNN) are constituents of tobacco, largely as a result of the way it's processed, while others such as benzopyrene result from the combustion of tobacco [18]. These chemicals form part of the particulate matter in smoke. Tobacco smoke also contains gas, carbon monoxide (CO). CO is a potent toxin, displacing oxygen from hemoglobin molecules. However, acutely the quantity of CO in tobacco smoke is just too small to cause to hypoxia and

therefore the body produces increased numbers of red blood cells to compensate. Smokers who stop before their mid-30s have approximately the same life expectancy as never smokers. Smokers who stop show reduced levels of stress and mood disorder than those who continue [19]. They also report higher levels of happiness and life satisfaction than those who continue [20]. This suggests that smoking may harm mental state, though other explanations can't be ruled out on the present evidence.

## Conclusion

B.P.O employees are a distinct class in themselves and by Indian standards such employment is considered unconventional-night shift, a young employee base and western lifestyle including holidays. With high disposable incomes at a young age, they easily resort to smoking and drinking, Smoking was considered by many to be a quick-fix solution to their stress problems [21-24].

There is also a need for destressing facilities like gymnasium, games, yoga, meditation, library, and counselling facilities at the respective work places. Periodic health examination may be required for early detection and treatment of psychological disorders and other lifestyle diseases by engaging physicians, psychologists, psychiatrists, and public health experts. The importance of having a stress-free and healthy lifestyle should be stressed upon through regular IEC (Information, Education and Communication) activities.

## Limitation

The study does not highlight the main cause of smoking among the participants. Similar studies should be conducted on the population to generalize the result.

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