

SLEEP DEPRIVATION AND USE OF TOBACCO, ALCOHOL AMONG CAB DRIVERS IN BANGALORE CITY**Priyanka D¹, Murali R², Shamala A³, Yalamalli M⁴, Kashyap B⁵, Koul M⁶**¹⁻⁶Department of Public Health Dentistry, Krishnadevaraya College of Dental Sciences, Bangalore, India**Address for Correspondence:**

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ABSTRACT:

Background: Sleep deprivation influences a person's life in many aspects and is often associated with high stress and poor judgement skills. Lack of sleep has been suggested to be a major cause of road traffic accidents among motor vehicle drivers as it leads to the withdrawal of the driver's attention from the roads. Drivers believe that the use of substances such as tobacco and alcohol will significantly keep them awake and improve their alertness. The present study was conducted to evaluate the sleep deprivation and use of tobacco and alcohol among cab drivers.

Methods: A cross sectional study was carried out among 150 cab drivers in Bangalore city. Participants were interviewed using a pre designed, pre tested questionnaire consisting of 30 questions regarding sleep pattern, tobacco and alcohol use. The data was analysed using SPSS version 21 and $p < 0.05$ was considered statistically significant. Chi square test was used to analyze the data.

Results: 39.1% of cab drivers had a chance of dozing while driving. The overall prevalence of tobacco and alcohol use among cab drivers was 84.8% and while the prevalence of smoking, smokeless and both were 19.9%, 29.8% and 39.7% respectively. The reason for using tobacco by 39.7% drivers was "to be awake".

Conclusion: Prevalence of tobacco consumption was high among cab drivers. Almost half of them had a chance of dozing while driving. It was evident that long hours of driving and infrequent shifts played a greater role in acquiring the habits.

Keywords: Cab drivers, Sleep deprivation, Tobacco use.

INTRODUCTION

Good quality sleep is essential for good health and well-being. Sleep deprivation is due to total sleep loss, partial sleep loss, extended wake duration, or sleep disturbances. It occurs when an individual gets less sleep than they need to feel awake and alert.¹ The main effects of sleep deprivation include physical effects like sleepiness, fatigue, hypertension and cognitive impairment like deterioration of performance, attention and motivation; diminishment of mental concentration increase of the likelihood of accidents at work and during driving.²

Lack of sleep has also been suggested to be a major cause of road traffic accidents among motor vehicle drivers as it leads to the withdrawal of the driver's attention from the road and other traffic.³

Tobacco and alcohol use are serious public health problems in many countries including India because of associated health hazards.⁴

Tobacco use imposes a huge burden of disease in India and is a major global public health problem, with the worldwide tobacco-attributable deaths projected to be 8.3 million in 2030.⁵

The occupational environment plays an important role in affecting general health.⁶ It is the sum of external conditions and influences which prevail at the place of work and which have a bearing on the health of the working population.⁷

Drivers work in unfavorable climate conditions and face different types of problem during travel like traffic congestion, vehicle fume, vibration and poor condition of roads. Due to hectic schedule they commonly use tobacco as smoking and chewing form to keep them alert during travel and alcohol to relieve stress.⁸

Hence, this study is aimed to evaluate the sleep deprivation and use of tobacco and alcohol in cab drivers as this group of

population are under constant pressure and work even in odd hours in the city.

MATERIALS AND METHODS

Study design: The present study was a questionnaire based, descriptive, cross sectional study.

Study population: The study population consisted of 150 cab drivers of Bangalore city.

The sample size of 150 cab drivers was calculated using the prevalence of tobacco use among drivers and conductors in India⁹, which was calculated using formula

$$n = 4pq/L^2,$$

Where

P = 77.9 (prevalence of tobacco use among drivers and conductors in India)

$$Q = (100 - P) = 22.1$$

L = Allowable error (10% of P)

$$n = 4*77.9*22.1/7.7*7.7 = 116.14$$

The sample size was rounded off to 150.

Selection of participants: Sampling technique used in the study was convenience sampling. All the cab drivers who agreed to participate in the study. Informed consent was obtained from the participants before the start of the study.

Inclusion criteria: Working as a cab driver for more than 1 year and is a full-time cab driver.

Exclusion criteria: Persons not willing to participate in the study.

Collection of data: Data collection comprised of interviewing the study subjects using structured pretested questionnaire. It consisted of demographic details and 30 questions. The first part consisted of 4 questions to evaluate sleep deprivation. In second part, the use and frequency of smoking and smokeless tobacco was assessed by 18 questions. Third part consisted 8 questions regarding use and frequency of alcohol. The data was collected during working hours. The study was conducted for a period of 45 days from August 2016 to September 2016. A pilot study was conducted among 30 cab drivers for pre testing the questionnaire and to determine the

feasibility of the study. Cronbach's Alpha calculated for the questionnaire was 0.73.

Ethical approval: The ethical clearance was obtained from the institutional review board of Krishnadevaraya College of Dental Sciences.

Statistical analysis: The data collected was compiled using Microsoft excel and was subjected to statistical analysis using statistical package for social sciences program(SPSS for windows, version 21) and the level of significance was set at $p \leq 0.05$. Frequency distribution, number, percentage was calculated. The descriptive statistics and statistical significance of any difference was determined using Chi square test.

RESULTS

A cross sectional study was conducted among 150 cab drivers. In this study all 150 participants were male. Age wise distribution of study participants showed that 49.4% were in the age group of 21-30 years and 38.6% were in the age group of 31-40 years followed by 12% were more than 40 years of age group.(Table 1).

TABLE 1: - DISTRIBUTION OF STUDY PARTICIPANTS ACCORDING TO THEIR AGE GROUP

Age	Frequency(N)	Percent (%)
21-30	74	49.4
31-40	58	38.6
>40	18	12
Total	150	100.0

FIGURE 1:- DOZING OFF WHILE DRIVING AMONG STUDY PARTICIPANTS

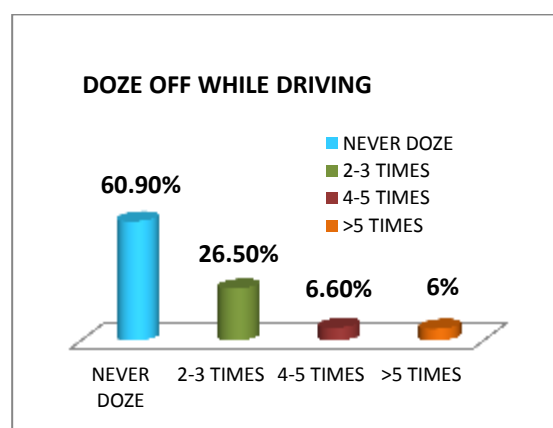


TABLE NO 2:- TOBACCO AND ALCOHOL USE AMONG STUDY PARTICPANTS

	TOBACCO USE		ALCOHOL USE		BOTH TOBACCO AND ALCOHOL USE	
	Frequency(N)	Percent (%)	Frequency(N)	Percent (%)	Frequency(N)	Percent(%)
Yes	127	84.6	88	58.9	77	51.3
No	23	15.4	62	41.1	73	48.7
Total	150	100.0	150	100.0	150	100

TABLE NO 3:- RELATIONSHIP BETWEEN TOBACCO CONSUMPTION AND SLEEP DEPRIVATION AMONG CAB DRIVERS

Tobacco use		Sleep Deprived		Total	p value
		Yes	No		
Yes	n	111	16	127	0.17(NS)
	%	88.1%	66.6%		
No	n	15	8	23	
	%	11.9%	23.4%		
Total	n	126	24	150	
	%	100.0%	100.0%		

Use of alcohol		Sleep Deprived		Total	p value
		Yes	No		
Yes	72	72	16	88	0.217(NS)
	57.1%	57.1%	66.7%		
No	54	54	8	62	
	42.9%	42.9%	33.3%		
Total	126	126	24	150	
	100.0%	100.0%	100.0%		

Figure 2 shows the percentage of cab drivers who doze off while driving with 26.5% doze off 2-3 times followed by 6.6% doze off 4-5 times and doze off more than 5 times.

The use of tobacco and alcohol among study participants in which 84.6% had tobacco habits, 58.9% consumed alcohol and 51.3% used both tobacco and alcohol. 15.4% were not using any type of tobacco product. (Table 2)

FIGURE 2:- FORM OF TOBACCO USE AMONG STUDY PARTICIPANTS.

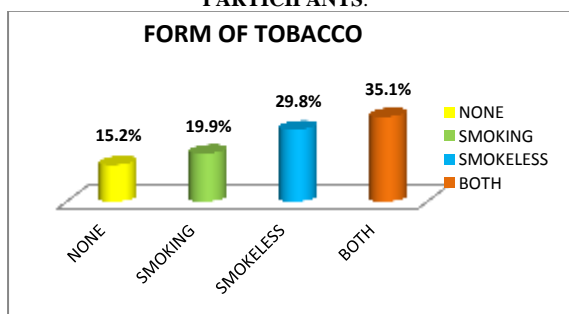


TABLE NO 4:- RELATIONSHIP BETWEEN REASON FOR USE OF TOBACCO AND SLEEP DEPRIVATION AMONG STUDY PARTICIPANTS

Reason for use of tobacco		Sleep Deprived		Total	p value
		Yes	No		
None	n	15	8	24	0.000*
	%	11.9%	33.3%		
To reduce stress	n	16	3	19	
	%	12.7%	12.5%		
To be awake	n	58	2	60	
	%	46.0%	8.4%		
Habitual	n	36	8	44	
	%	28.6%	33.3%		
Any other reason	n	1	3	4	
	%	0.8%	12.5%		
Total	n	126	24	150	
	%	100.0%	100.0%		100.0%

The comparison of sleep deprivation related to tobacco and alcohol use among cab drivers in which 88.1% used tobacco in any form and

58.7% consumed alcohol in some form. They did not show any statistical significance in between tobacco and alcohol consumption and sleep deprivation of cab drivers. (Table 3)

The comparison of sleep deprivation related to reason of tobacco use among cab drivers. The reason given by sleep deprived cab drivers for consuming tobacco to be awake (46%) followed by any other reason (28.6%) and due to stress (11.6%). There was statistically significant association between tobacco use and sleep deprivation of cab drivers. (Table 4)

DISCUSSION

In our study, most of the taxi drivers are in the younger age group, i.e., more than 88% of the cab drivers are below the age of 40 years. The rise in the younger individuals opting for this job is due to the recent introduction of application-based cab aggregator firm, who offer good pay and incentives. The incentives are offered to them based on the number of rides. Hence, to achieve the target to get incentive, many taxi drivers opt to drive for longer hours and even during nighttime.

In this study almost quarter of drivers (26.5%) would doze 2-3 times while driving which was in agreement with the study conducted by Philip P et al (2005)¹⁰ and Häkkänen H (2000)¹¹.

The cab drivers have very high rate (84.6%) of tobacco and (58.9%) alcohol use. During questioning they told that to keep themselves awake and alert during driving they develop the tobacco and alcohol habits. In the present study 39.7% drivers gave reason for use of tobacco is to be awake which was in agreement with the study conducted by Bhatia M et al (2014)¹², Selvanathan S et al (2018)¹³ and Adekoya BJ (2011)¹⁴

In current study, amongst all tobacco users, 19.9% drivers were smokers, 29.8% used chewing tobacco, and 35.1% used both form of tobacco the reason could be the drivers cannot smoke during driving as the passengers could object to the exposure to the second-hand smoke. A study conducted in North Central India found that prevalence of

smoking and tobacco chewing among drivers were 52.25% and 64.25% respectively.

In present study 126 cab drivers who were found to be sleep deprived. Reason was having odd hours and long hours duties during which they suffer the stress of driving and awakening in the night hours.

Among the sleep deprived cab drivers, 111 (88.1%) used tobacco and 72 (57.1%) consumed alcohol. The probable reason given by sleep deprived cab drivers for consuming tobacco and alcohol was to remain awake (46%) followed by any other reason (28.6%) and due to stress (11.6%). In our study, reason for use of tobacco was significantly associated between the sleep deprived ta drivers and the p value (>0.05).

LIMITATIONS

As the study is a cross-sectional study, the results can be demonstrated as association and cannot provide evidence for causality. Another limitation is the self-reported rates of consumption of tobacco and alcohol, as there could be some underreporting of this addictive behavior.

CONCLUSIONS

It was very evident that long hours of driving and infrequent shifts played a greater role in acquiring the habit. Behavioral counseling and new laws need to be formed to limit the working hours in drivers to have an effective tobacco and alcohol control.

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