Research Article

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Occupational stress and its associated health disorders among bus drivers

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ABSTRACT

Background: Bus drivers as compared to workers in other jobs, are more likely to experience cardiovascular diseases, gastrointestinal disorders and musculoskeletal disorders. Occupational stress is believed to play a significant role in causing these problems. The objective of this study is to assess the occupational stress and to find the prevalence of cardiovascular, gastrointestinal and musculoskeletal disorders among bus drivers and its association if any, with occupational stress.

Methods: Cross sectional study was conducted from June 2004 -May 2005 among bus drivers of a Bus terminal of Mumbai city. 210 bus drivers were included in the study. Occupational stress was assessed by using Stress- related health complaints questionnaire.

Results: Hypertension was seen among 24%, Dyspepsia, regurgitation among 52%, lower back among 79% of bus drivers. Morbidities were significantly high among the drivers who had high occupational stress score.

Conclusions: Occupational stress is associated with hypertension, gastrointestinal and musculoskeletal problems among bus drivers.

Keywords: Occupational stress, Bus drivers, Blood pressure, Musculoskeletal problems, Gastrointestinal problems

INTRODUCTION

The job of operating public transit vehicles is amongst the most stressful and unhealthy of modern occupations. Literature over last four decades on bus drivers shows that as compared to workers in other jobs, bus drivers are more likely to experience cardiovascular diseases, gastrointestinal disorders and musculoskeletal disorders. Occupational stress is believed to play a significant role in causing cardiovascular, gastrointestinal disorders and musculoskeletal disorders. Host Bus driving is particularly a stressful job, which has high psychological demands and little decision making control, in combination with low social support on the job. The main task of bus drivers is to drive safely and maintain timely schedule, yet two of

these tasks are inherently contradictory. In order to accomplish one, the other may have to be compromised.⁵

Job factors which contribute to developing stress in bus drivers are work shift schedule, irregular meal times and poor nutrition, traffic congestion, prolonged period of driving, constant visual and mental alertness and driving during night hours in bad weathers conditions. Social support helps to protect the individual from experiencing stress. Bus driving interferes with social support in two ways. The job itself is solitary with little chance for face to face contact between co-workers and the work schedule disrupts family and social life. The design of the driver's cabin and how the work is scheduled accounts for musculoskeletal problems associated with bus driving.

There are very few studies among Indian bus drivers regarding occupational stress, so the present study was designed with the objectives to: 1) Assess the occupational stress among bus drivers. 2) To find the prevalence of cardiovascular, gastrointestinal and musculoskeletal disorders among bus drivers and its association if any, with occupational stress.

METHODS

The cross sectional study was conducted during June 2004 to May 2005 among bus drivers working at a Bus terminal of Mumbai city. There are three major bus terminals in the city one bus terminal was randomly selected. All the 230 bus drivers working at the terminal were enrolled in the study. Permission was obtained from the concerned authorities to conduct the study. Prior to the data collection informed consent was obtained from the bus drivers and the study was approved by Institutional Ethics committee.

Data was collected from 210 bus drivers as 20 drivers could not be contacted because of leave and work schedule. Data collection was done by using pretested, semi-structured proforma. Proforma consisted of closed ended questionnaire 1. Stress- related health complaints questionnaire 2. Self-reported health symptoms: cardiovascular, gastrointestinal and musculoskeletal, past and personal history, general and systemic examination. The validity and reliability of Stress- related health complaints questionnaire was previously tested by M AJ Kompier.² In consultations with the expert's suitable changes were made in the questionnaire to suit Indian bus drivers without losing its validity. Stress- related health complaint questionnaire consisted of 13 questions and response either as 'Yes' or 'No'. Score was categorized as Low stress: 0-4 'Yes' response, Medium stress: 5-8 'Yes' responses and High stress: 9-13 'Yes' responses.

If bus drivers reported symptoms for more than 30 days in previous 12 months was labelled as having morbidity.⁷⁻

Statistical analysis

Data was entered in Microsoft Excel 1998-2003 and data was analyzed using 11.5 version SPSS software. Mean stress score and SD and 95% CI were calculated and Z test was applied as a test of significance to see observed difference in the mean stress score was significant with different variables.

RESULTS

60% of bus drivers were above >40 yrs of age, 95.2% were educated up to secondary school, 66.2% had job duration >10 yrs and had 63.8% had no history of accidents in the job. Occupational stress level was moderate among 114 bus drivers and high among four bus drivers.

Table 1: Demographic, job characteristics and occupational stress level among bus drivers.

Characteristic	Number (n=210)	Percentage		
Age (Yrs)				
< 40	84	40.0		
≥40	126	60.0		
Education				
Primary and	200	05.2		
Secondary	200	95.2		
Higher Secondary and	10	4.8		
above	10	4.0		
Job duration				
< 10 yrs	71	33.8		
≥10 yrs	139	66.2		
H/o accidents				
Yes	76	36.2		
No	134	63.8		
Level of stress				
High (score- 9-13)	4	8.4		
Moderate (score 5-8)	114	57.8		
Low (score 0-4)	92	43.8		

Hypertension was most common cardiovascular morbidity seen among 24% of the bus drivers. Dyspepsia and regurgitation was seen among 52% of drivers. Lower back pain was the commonest musculoskeletal morbidity seen among 79% of bus drivers followed by knee pain (24.76%), neck pain (14.76%) (Table 1).

Analysis by using Z test as an test of significance showed that Occupational stress score was significantly high among bus drivers having age more than 40 years, job duration more than 10 years and who had history of road accidents (Table 2). All the symptoms/morbidities cardiovascular, gastrointestinal and musculoskeletal were significantly high among the drivers who had high occupational stress score. (Table 3)

DISCUSSION

In this study most of the bus drivers were exposed to moderate level of occupational stress (Stress score: 5-8). It was found that, the stress score was significantly high among bus drivers who were older and having job duration more than 10 years. Contrast finding was reported by Carrere S. et al and Albright C.L. et al that stress was high among younger bus drivers and having less job duration. This difference may be because in western countries senior bus drivers are allowed to select their bus routes and have more autonomy as compare to young drivers.

Stress was not found significant with level of education. Similar finding was reported by S. Carrere et al. History of accidents was reported high among bus drivers who had high stress score this confirms similar study results reported by G. W Evans et al.⁹

Blood pressure was significantly high among bus drivers having high stress score. This finding is consistent with the finding reported by Carina Bolocan et al that systolic blood pressure was significantly correlated (r= 0.45) with professional stress among drivers. 10

Table 2: Statistical analysis of level of stress vs demographic and job factors.

Characteristic	N (%) n=210	Mean Stress score (±SD)	95% CI	Z test value	P –value
Age (Yrs)					
<40	84 (40)	3.61 (2.31)	3.11-4.11 4.74-5.57	7.96	0.0001
≥ 40	126 (60)	5.15 (2.35)	4.74-5.57		
Education					
Primary, secondary	200 (95.23)	4.59 (2.45)	4.25-4.93	1.52	0.06
Higher secondary and above	10 (4.77)	3.60 (2.17)	1.85-4.93		
Job duration (Yrs)					
<10	71 (33.80)	3.45 (2.35)	2.89-4.01	5.12	0.0001
≥10	139 (66.20)	5.09 (2.31)	4.70-5.47		
H/o Accident					
Yes	76 (36.20)	5.51 (1.82)	5.10-5.93	5.20	0.0001
No	134 (63.80)	3.98 (2.58)	3.54-4.42		

Table 3: Level of stress vs cardiovascular, gastrointestinal and musculoskeletal morbidities among bus drivers.

Symptom/Morbidity	N=210 (%)	Mean Stress score (±SD)	95% CI	Z test value	P value
Palpitation					
Yes	17(8.09)	7.76(2.46)	6.50-9.03	5.70	0.0001
No	193(91.91)	4.25(2.24)	3.93-4.57		
Dizziness					
Yes	11(5.23)	8.64 (1.69)	7.50-9.77	8.32	0.0001
No	199(94.77)	4.31 (2.28)	3.99-4.63		
Hypertension					
Yes	51(24.28)	6.86 (2.60)	6.13-7.60	10.20	0.0001
No	159(75.72)	3.79 (1.86)	3.49-4.08		0.0001
Dyspepsia					
Yes	110(52.38)	5.58 (2.36)	5.14-6.03	7.58	0.0001
No	100(47.62)	3.38 (1.98)	2.99-3.77	1.36	
Regurgitation					
Yes	111(52.40)	5.60 (2.26)	5.18-6.03	- 0 1 /	0.0001
No	99(47.60)	3.32 (2.07)	2.92-3.75	8.14	
Pain in Epigastrium					
Yes	18(8.57)	7.22 (2.41)	6.02-8.42	5.06	0.001
No	192(91.43)	4.28 (2.30)	3.95-4.61	3.00	
Neck pain					
Yes	31(14.76)	5.09 (2.56)	4.96-6.84	2.22	0.001
No	179(85.24)	4.30 (2.35)	3.95-4.46	3.33	
Lower Back pain					
Yes	166(79.04)	5.20 (2.12)	4.88-5.53	10.6	0.0001
No	44(20.96)	2.00 (1.86)	1.43-2.57		
Shoulder pain					
Yes	11(5.23)	7.00 (3.09)	4.92-9.08	2.72	0.003
No	199(94.77)	4.40(2.34)	4.07-4.72		
Knee pain					
Yes	52(24.76)	5.81(2.07)	5.23-6.39	5.15	0.0001
No	158(76.24)	4.11(2.42)	3.73-4.49		

Dyspepsia and regurgitation was reported by 52% of bus drivers similarly 56% prevalence of gastritis was reported among drivers by Nijole Maciulyte.¹¹

In the present study lower back pain was the commonest musculoskeletal morbidity of bus drivers followed by knee pain and neck pain. Nijole Maciulyte reported that 56.62% bus drivers suffered from low back pain, Neck pain 11.6% and lower limb pain in 20.88%. Jiu Ciaun et al¹² reported prevalence of knee pain among taxi drivers was significantly associated with job stress. OR (2.9, p<0.001).

CONCLUSION

Most of the bus drivers had moderate to high occupational stress. Blood pressure, musculoskeletal morbidity like low back pain, knee pain, neck pain and shoulder pain and gastrointestinal symptoms like dyspepsia and regurgitation were more among bus drivers with high stress.

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Institutional Ethics Committee

REFERENCES

- Evans GW, Carrere S. Traffic Congestion, perceived control and psychological stress among urban bus drivers. Journal of applied Psychology. 1999;75(5):658-62.
- 2. Kompier MA. Bus drivers occupational stress and stress prevention. Working paper: Department of work and organizational psychology, University of Nigmegen. ILO, Geneva; 1996.

- 3. Netterstorm B, Kundu J. Impact of work related and psychological factors on the development of Ischemic heart disease among urban bus drivers Denmark. Scandinavian Journal of Work, Environment Medicine. 1998;4:237-8.
- 4. Bartone PT. Predication of stress related Illness in city Bus drivers. Journal of Occupation Medicine. 1989;31(8):657-63.
- Whitelegge J. Health of Professional drivers- A Report Series. Ecologica Ltd. White cross. Lancaster; 1995.
- MFL Occupational Health Centre. Available at http://www.mflohc.mb.ca/fact_sheets_folder/bus_dr ivers.html. Accessed 3 March 2004.
- 7. Sybil C, Evans GW, Palsane MN. Job strain and occupational stress among urban public transit operators. Journal of Occupational Psychology. 1991;64:305-16.
- 8. Albright CL, Winkleby MA, Ragland DR, Syme SL: Job strain and prevalence of hypertension in a Biracial population of urban bus drivers; 1992;82(7):984-9.
- Evans GW, Palsane MN, Sybil C, Rivas M. Type of Behaviour and occupational stress: A cross sectional study of blue collar workers: Journal of social psychology. 1987;52:1002-7.
- Corina B, Rodica A, Simona R, Florentina V, Sorin U. Occupational stress influence on blood pressure in professional drivers. Scandinavian Journal of work environment Health. 2003;265 Part-2:313-6.
- 11. Nijole M. Bus drivers health and conditions of work: Paper presented at ECOHSE symposium, Lithunia; 2000.
- 12. Jiu Chiaun JT, Tung S. Knee pain and driving duration: A secondary analysis of the taxi drivers health study. American journal of Public health. 2004;4:575-81.

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