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Original Research Article

A cross sectional study on prevalence of obesity among bus drivers of Metropolitan Transport Corporation Limited, Chennai

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ABSTRACT

Background: The job of bus driving involves several health risks. Both individual behaviours and work environmental variables contribute to higher obesity prevalence and risk of excess weight gain in this occupational group. This study has been planned to study the prevalence of obesity among bus drivers and to make recommendations to prevent obesity among bus drivers.
Methods: The study was planned among bus drivers of the bus depots of Metropolitan Transport Corporation Limited, Chennai between January 2014 and June 2014. The sample size was calculated based on the assumption where the prevalence was 50%. Considering Confidence level of 95%, absolute precision of 5% with 10% excess sampling to account for non- response, the sample size derived was 422. Multistage sampling method was used. The required information was obtained by means of validated questionnaire and also by anthropometric measurements.
Results: The mean age of the respondents was 42.32yrs. 41% of respondents were overweight. 14.5% of the respondents were found to be obese. Of the obese 22.7% were in the age group of above 50 yrs. There was found to be a statistical significance between age and obesity with a chi square value of 13.60 and a p value of less than 0.001.
Conclusions: There was a significant association between age and obesity among bus drivers. There was also vast scope to avoid health risk factors by routine exercise, having regular diet and rest. With the help of experts of yoga, meditation, physical educationist, gymnasium experts etc. the drivers may be given counselling as to how to maintain the body mass index.

Keywords: Obesity, Bus drivers, Metropolitan Transport Corporation Limited, Chennai

INTRODUCTION

The job of bus driving involves several health risks. There has been a deterioration in work conditions of bus drivers over the last 20 years.[1] Studies consistently report that bus drivers have higher rates of mortality, morbidity, and absence due to illness when compared to employees from a wide range of other occupational groups.[2,3] This would result in risk to life of passengers, other road users and pedestrians as well as damage to property and vehicles. Driving as a profession puts strain on healthy life style practices of an individual. The health of bus drivers is an important issue in public health, occupational health, transport policy and employment conditions.

Probably both individual behaviours and work environmental variables contribute to higher obesity prevalence and risk of excess weight gain in this occupational group.[4] Long work hours, shift work, lack of scheduled breaks or meals, and lack of healthful food and physical activity options on the transportation routes or in

the transportation hubs (e.g. bus or train garage) are some of the structural variables that make healthful food choices and physical activity difficult for transportation workers.[2,4] Worksite physical and social environments provide opportunities and exposures that influence individual food choices and physical activity behaviours.[5] Obesity as a Coronary Heart Disease risk factor has been implicated along with drivers irregular eating habits, low levels of physical activity at work and at leisure, smoking and even poor social networking.[6] Measures to protect and improve the health status of bus drivers particularly should be pursued in a way that maximises gains to all sectors of society at large and individual and families of bus drivers in particular. As such, this study has been planned to study the prevalence of obesity among bus drivers and to make recommendations to prevent obesity among bus drivers.

METHODS

Study Design

This study was done as a cross sectional descriptive study on the prevalence of obesity among bus drivers

Study area

The study was planned among bus drivers of the bus depots of Metropolitan Transport Corporation Limited, Chennai.

Study period

The study was conducted during the period between January 2014 and June 2014.

Sample Size

The sample size was calculated based on the assumption where the prevalence was 50%. Considering Confidence level of 95%, absolute precision of 5% [7] with 10% excess sampling to account for non- response, the sample size derived was 422

Sampling Method

Multistage sampling method was used.

First stage: Chennai district was selected from Tamil nadu by simple random sampling

Second stage: Metropolitan Transport Corporation Limited was selected from Chennai district by simple random sampling.

Third stage: Five bus depots were selected by simple random sampling method from 25 depots of Chennai Metropolitan Transport Corporation.

Fourth stage: Based on probability proportionate to size technique bus drivers were selected from each of 5 depots by simple random sampling.

Inclusion criteria

Inclusion criteria were all bus drivers of Chennai Metropolitan Transport Corporation Limited of selected bus depots.

Exclusion criteria

Exclusion criteria were bus drivers who were not willing to participate.

Study tool

Validated semi-structured questionnaire was used. The questionnaire contained questions on basic socio demographic profile and anthropometric measurements.

Height

The height was recorded with the individuals against height scale marked in centimeters without footwear, occiput, buttocks and back foot touching the wall looking straight and forward. The upper limit which recorded to the nearest single decimal point was taken as height of the individual.

Weight

Weight was recorded without footwear and minimal clothing. Before each reading zero error was checked

Body mass index

Body Mass Index (BMI) was calculated by the formula weight in kg/ (height in meter).[2] Bus drivers with body mass index between 25 and 29.99 were considered to be pre –obese and bus drivers with body mass index more than 30 were considered to be obese.[8]

Data collection

- Official permission to conduct the study in bus drivers was obtained from of Institute the Managing Director, Metropolitan Transport Corporation Limited, Chennai and the Institutional Ethics Committee.
- After obtaining the informed consent from the bus drivers, the semi-structured questionnaire was administered to bus drivers in the local language i.e. Tamil.
- Driver's anthropometric measurements were taken at bus depot premises in liaison with Metropolitan Transport Corporation Limited, Chennai.

Outcome variables

Bus drivers with body mass index between 25 and 29.99 were considered to be pre–obese and bus drivers with body mass index more than 30 were considered to be obese.[8]

Analysis

- The data were entered in MS excel and were analyzed using SPSS Version 21.

Appropriate descriptive and inferential statistics were used to analyze the data p value of <0.05 was considered statistically significant**.** Data was checked for normality before applying appropriate tests of significance (Chi square test).

RESULTS

From the information obtained by means of questionnaire from 422 bus drivers statistical analysis have been made and the results of the analysis have been stated in the following paragraphs.

The single largest group of respondents was in between 31 and 40 yrs of age. The mean age of the respondents was 42.32yrs. 42.7% of the respondents were up to 10th standard which was the single largest group of educational qualification. 2/3rd respondents were only up to school education (42.7% of respondents were up to 10th standard, 36%upto plus two. Below 10 yrs of service is the single largest group of respondent constituting 38.2% (Table 1).

Table 1: Socio demographic particulars (n=422).

Socio demographic particulars		N	%
Age (n=422)	less than 30 yrs	25	5.95
	31 to 40 yrs	158	37.45
	41 to 50 yrs	150	35.5
	Above 50 yrs	89	21.1
	Total	422	100.0
Education (n=422)	up to 10th standard	180	42.7
	11^{th},12^{th}	152	36.0
	Diploma	51	12.1
	Degree	39	9.2
	Total	422	100.0
Service (n=422)	less than 10yrs	161	38.1
	11 to 20yrs	145	34.4
	21 to 30yrs	79	18.7
	above 30yrs	37	8.8
	Total	422	100.0

Table 2: Prevalence of obesity (n=422).

Age group		Under weight		Normal		Over weight		Obese		Total	
		N	%	N	%	N	%	N	%	N	%
Age	less than 30 yrs	2	8.0	14	56.0	6	24.0	3	12.0	25	100.0
	31 to 40 yrs	6	3.8	74	46.8	67	42.4	11	6.9	158	100.0
	41 to 50 yrs	3	2.0	50	33.6	69	46.3	27	18.0	149	100.0
	Above 50 yrs	1	1.1	37	42.0	30	34.1	20	22.7	88	100.0
	Total	12	2.9	175	41.7	172	41.0	61	14.5	420	100.0

Test of statistical significance

Chi square test was applied to know the association between age and obesity. 41% of respondents were overweight. Of the overweight 46.3% were in the age group of 41 yr to 50 yr. 14.5% of the respondents were found to be obese. Of the obese 22.7% were in the age group of above 50 yrs. There was found to be a statistical significance between age and obesity with a chi square value of 13.60 and a p value of less than 0.001 (Table 2).

DISCUSSION

The present study was done to find out the prevalence of obesity among the bus drivers of Metropolitan Transport Corporation Limited Chennai. In the present study the mean age of the respondents was 42.32 years. 41.1% were with overweight. The study of Izadi et al in Theran in 2010 and 2011 among the bus and truck drivers revealed that 20.8% were with obesity.[9] In a study conducted by Saberi and others in Iran in 2011, 41% were with overweight and 23% were found to be with

obesity.[10] In a study conducted by Mohebbi and others in Iranian professional drivers in 2012, overweight was found to be 41.4% cases and obesity was found to be 21.3%.[11] In the present study among the respondents those with overweight was found to be 41.1% and those with obesity was found to be 14.5% which were similar to the above studies. Lack of awareness concerning the consequences was responsible for higher prevalence of obesity and overweight among drivers as per the same study.[10] The prevalence of obesity is significant in our study and it needs attention to prevent the morbidities and mortalities related to obesity in the larger interest promoting the health of bus drivers as passengers have to be safeguarded by the drivers.

CONCLUSION

The analysis revealed the fact that the mean age of bus drivers was 42.32 years. 41.1% were with overweight. There was a significant association between age and obesity. There was also vast scope to prevent obesity by weight reduction, healthy and well balanced diet regularly. With the help of experts of yoga, meditation, physical educationist, gymnasium experts etc. The drivers may be given counselling as to how to maintain the body mass index.

Limitations

1. The data collection has been restricted to one geographical area in Chennai city of Tamil Nadu in India in view of operational constraints.
2. The study is confined to drivers of Metropolitan Transport Corporation Limited, Chennai.
3. The results of the study are based upon the information provided by the sample respondents.
4. The study does not allow the determination of causal association since we used a cross-sectional study.

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