

Respiratory Health Problem among the Taxi Drivers of Pokhara Metropolitan City, Nepal

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ABSTRACT

Respiratory health problems affect the respiratory tract and lungs. WHO states that four major potentially fatal respiratory problems will account for about one in five deaths worldwide by 2030. Taxi drivers are among the major sub-population at the risk of respiratory problems because of their exposure to polluted environment. Therefore, the present study aimed to find out the respiratory health problems among the taxi drivers of Pokhara metropolitan city of Nepal. A cross sectional study was conducted among 203 taxi drivers of the Pokhara Metropolitan city. Multistage sampling method was used to select the desired number of taxi drivers. Data were entered into EPI-DATA 3.1 and then analyzed in SPSS 20. Percentage, mean, and standard deviation were assessed to describe, and chi square test was used to infer the findings. Ethical approval for this study was obtained from Nepal Health Research Council. All samples were male with mean age of 38.46 ± 7.8 years. Majority of the taxi drivers were educated up to secondary level (54.2%), married (91.6%), were married and 78.8 percent had income of NRs 1000-1500/day. A large proportion of the drivers (96.6%) had to work for more than 10 hours/day and three-quarters (74.4%) of them did not take rest even in weekends. Nearly a quarter (24.1%) of them complained at least one respiratory health problem or symptom. Prevalence of respiratory health problems among the taxi drivers was 24.1 percent. Job duration was significantly associated with the respiratory symptoms.

Key words : Respiratory problem, preventive practice, taxi driver

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INTRODUCTION

Respiratory health problems are the problems that affect the air passages, including nasal cavity the bronchi and the lungs. It includes both acute respiratory infections and chronic respiratory diseases¹ Air pollution due to road traffic is a serious health hazard and thus the persons who are continuously exposed, are at an increased risk. Various evidences suggest that there is relationship between occupational exposures like dust, chemicals, gases and the respiratory diseases. So, people's working condition plays a vital risk factor for the respiratory disease². Vehicles are the one of the major reasons for the air pollution because of the complex fuels like petrol and diesel which reacts with the others gases and atmospheric conditions. So, the taxi drivers are one of the most vulnerable populations who suffer from the respiratory problems.³

Annual report 2072/73, Department of Health Services, Nepal; Chronic Obstructive Pulmonary Disease (COPD) was the second cause for inpatient morbidities and Upper Respiratory Tract Infection (URTI) and Lower Respiratory Tract Infections (LRTI) were the first and fourth causes for outpatient visit respectively. Top most cause for death of

inpatient was COPD⁴. According to the study done in 2008, it has shown that the particulate matter in Pokhara was very high. Overall mean concentration in Prithvi Chowk of Pokhara was $1733.846 \mu\text{g}/\text{m}^3$, in B.P Chowk was $17598.032 \mu\text{g}/\text{m}^3$, Mahenderapool was $1559.107 \mu\text{g}/\text{m}^3$, which are quite above of acceptable concentration.⁵ So, the taxi drivers are among the vulnerable population who are exposed to air pollution on regular basis. Respiratory diseases occur as occupational hazards to them. Therefore, present study aimed to study the respiratory health problems among the taxi drivers of Pokhara metropolitan city, Pokhara.

METHODS

This study was cross sectional and descriptive study. The study population was the taxi driver of Pokhara Metropolitan City. The study period was of six months, from June to November 2018. A total of 203 samples were selected through multistage sampling technique. Twelve clusters were chosen from the 36 clusters randomly. A cluster was made based on the information given by Taxi Association of Pokhara and then population units were chosen from the selected clusters through proportionate sampling technique. Taxi drivers who were working less than four hours in a day were excluded.

ed. Personal interview and record review were done using semi-structured questionnaire and recording format. Ethical approval was obtained from Nepal Health Research Council (NHRC) and written/verbal informed consent was obtained from the taxi drivers. Data was entered into EPI-DATA 3.1 and analyzed by SPSS 20 version. Descriptive statistics-percentage, mean, standard deviation and inferential statistics-Chi square test was used to infer the findings.

RESULTS

Table 1: Socio-demographic characteristics of taxi drivers

Socio-demographic variables	Frequency (n=203)	Percent
Age(in years)		
<30 years	21	10.3
30-40 years	90	44.3
40-50 years	74	36.5
≥50 years	18	8.9
Religion		
Hindu	170	83.7
Buddhist	29	14.3
Christian	4	2.0
Ethnicity		
Brahmin	49	24.1
Chettri	38	18.7
Janajati	65	32.0
Dalit	51	25.1
Education Level		
Illiterate	12	5.9
Basic education	74	36.5
Secondary	110	54.2
Graduation	7	3.4
Marital status		
Unmarried	17	8.4
Married	186	91.6
Daily earning(NRs)		
<Rs. 1000	21	10.3
Rs. 1000 - Rs. 1500	160	78.8
≥Rs. 1500	22	10.8

Table no 1 show that 44.3 percent of the respondents were of 30-40 years followed by 40-50 years (36.5%) old. Similarly, majority were Hindus (83.7%). Janajati accounts for 32 percent among the ethnic groups. Majority (54.2%) of the respondents had secondary level education and nine out of every ten taxi drivers were married. Majority (78.8%) of the taxi drivers had daily earning of NRs. 1000-1500.

Table 2: Distribution of the taxi drivers by the work experiences

Work related variables	Frequency	Percent
Working hours per day		
< 10 hours	7	3.4
10-15 hours	176	86.7
≥15 hours	20	9.9
Work experience (Years)		
< 10 Years	92	45.3
10-20 Years	82	40.4
20-30 Years	24	11.8
≥30 Years	5	2.5
Take rest in a week		
No	151	74.4
Yes	52	25.6

As indicated in table 2, majority of the taxi drivers works for 10-15 hours in a day (86.7%). About 45 percent of the taxi drivers had work experience of less than 10 years followed by the 10-20 years (40.4%). Similarly, majority (74.4%) of the respondent don't take rest in week.

Respiratory health problems/symptoms among taxi drivers

A total of 49 taxi drivers (24.1%) had respiratory ill symptoms at the time of data collection. As depicted in figure 1, out of these who experienced respiratory problems, the commonly experienced symptoms were coughing (66.7%), running nose (39.6%), chest pain (22.9%), throat irritation (20.8%), wheezing (14.6%) and breathing problem (10.4%).

Figure 1: Symptoms experienced by respondent (n= 49)

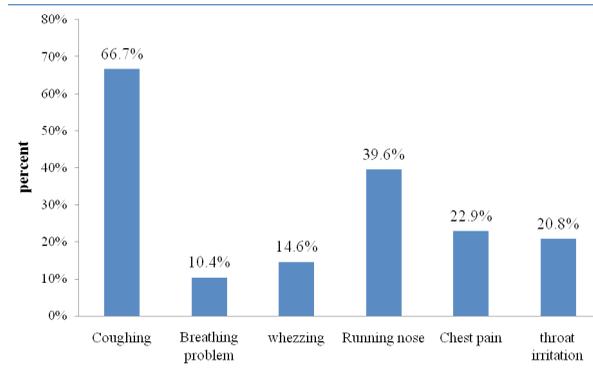


Table 3: Association of socio-demographic with respiratory symptoms

Characteristics	Respiratory symptoms		χ^2	Df	p-value
	No	Yes			
Age					
<40 years	88(79.27%)	23(20.72%)	1.562	1	0.211
≥40 years	66(71.74%)	26(28.26%)			
Religion					
Hindu	130(76.5%)	40(23.5%)	0.211	1	0.646
Non Hindu	24(72.73%)	9(22.27%)			
Ethnicity					
Brahmin	40(81.6%)	9(18.4%)	3.952	3	0.267
Chettri	28(73.7%)	10(26.3%)			
Janajati	52(80%)	13(20%)			
Dalit	34(66.7%)	17(33.3%)			
Daily earning					
<Rs. 1200	13(61.9%)	8(38.1%)	0.261	1	0.609
≥Rs. 1200	18(81.8%)	4(18.2%)			
Education level					
Illiterate	7(58.3%)	5(41.7%)	3.112	2	0.206
Basic Education	55(73.3%)	20(26.7%)			
Secondary and higher	92(79.3%)	24(20.7%)			

Table 3 shows that there wasn't any statistically significant between socio-demographic variables and respiratory symptoms.

Table 4: Association of respiratory symptoms and work related factors

Characteristics	Respiratory symptoms		χ^2	D.F	p-value
	No	Yes			
Working hour per day					
< 14 hours	98(77.2%)	29(22.8%)	0.31	1	0.613
≥14 hours	56(73%)	20(26.3%)			
Work Experience					
< 20 Years	137(78.7%)	37(21.3%)	5.492	1	0.032*
≥ 20 Years	17(58.6%)	12(41.4%)			
Rest in week					
No	112(74.2%)	39(25.8%)	0.919	1	0.338
Yes	42(80.8%)	10(19.2%)			

*P<0.05 considered significant

Table 4 shows that work experience was significant associated with the respiratory symptoms (p=0.032, $\chi^2=5.49$,df=1). Respondents who have worked more than for 20 years and higher prevalence of respiratory symptoms (41.4%) than those who had worked for less than 20 years (21.3%).

DISCUSSION

The present study was carried out to assess the respiratory health problems/symptoms among the taxi drivers of the Pokhara metropolitan city. In this study, mean age of the taxi driver was 38.46 ± 7.8 years. Four out of every five taxi

drivers were Hindu and most of them were Janajati. Majority (54%) of the respondents has secondary level education and nine out of every ten respondents were married.

Prevalence of respiratory symptoms

The prevalence of the respiratory symptoms among the taxi drivers in this study was 24.1percent which was similar to the study conducted in India where 24.2 percent of the transport workers (bus drivers, conductors and garage workers) had respiratory symptoms.⁶ Similar study done in the Nigeria also shows the slightly higher prevalence (28.6%) of respiratory

health problems⁷. Prevalence of respiratory health problems in this study was higher than that was reported among the drivers in Spain (11%)⁸. This difference may be because Spain is the European country and people over there may have use of preventive measures, less pollution and adoption of regulatory laws. A study done in the Dakar (Senegal) shows that the prevalence of the respiratory symptoms (62.3%) was much higher than that was reported in our study.⁹ The difference observed in between these studies could be due to the climatic, regulatory measures and site differences.

In this study among the respondent who have the reported respiratory symptoms 66.7 percent have cough, 10.4 percent breathing problem, 14.6 percent wheezing, 39.6 percent running nose, 22.9 percent chest pain, 20.8 percent throat irritation. A study done in the Nigeria shows that prevalence of the cough, breathing problem, wheezing, nasal discharge, chest pain and throat irritation were 32 percent, 34 percent, 42 percent, 16 percent, 56 percent, and 18 percent respectively⁷ and the study done in the China shows that prevalence of the cough, expectoration, sore throat and dry throat were 10.3 percent, 9.8 percent, 23.5 percent and 27 percent respectively.¹⁰ Studies done in the Nigeria and China shows the little different results this might be due to the various risk factors and difference in exposure time.

Association of respiratory symptoms with socio-demographic and work related factors

In our study, none of the socio-demographic factors were significantly associated with the respiratory health problems. A study conducted in the Nigeria among the male transit worker (taxi drivers, motorcyclist and civil servant) did not show any significant association with the socio demographic variables.⁷ Similar study done in India also shows similar findings.¹¹

This study, shows that the work experience was significantly associated with the respiratory symptoms ($p=0.032$, $\chi^2=5.49$, $df=1$) but other factors like working hours rest and satisfaction were not associated. In a similar study done in the Nigeria shows that risk of impaired pulmonary function related to working duration of exposure (OR 4; 95% CI, 2.11-7.58) for bus conductors and (OR 4.3; 95% CI 2.20-8.69) for bus drivers.⁷ This finding is similar to our findings which shows that there is a association between working years and respiratory problem. However, similar study from Nigeria did not show association with the respiratory problem except with the experience of drivers. In another study done in Senegal also does not show the association with the experience or working year.⁹ This difference may have been

seen because of the study was done in two different countries and various ergonomic factors may have played vital roles in the presence of health problems.

CONCLUSION

One-fourth of the taxi drivers had any respiratory health problems/symptoms and some of the commonly reported problems were cough, breathing problem, wheezing, running nose, chest pain, and throat irritation. Work experience of the drivers had statistical association with the respiratory symptoms. Use of personal protective measures and immediate management of problems including periodic health examination are recommended.

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