Assessment of respiratory problems among traffic policemen of east khasi hills district, Meghalaya with a view to develop information booklet

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Abstract

Introduction: Shillong city is one of the growing non-metros cities in India. With increased growth in population comes enormous increased in vehicular traffic which emits exhaust that pollutes the environment. Traffic Policemen are the vulnerable population exposed to the outdoor polluted environment, otherwise we can say that they are the prey to the polluted environment. They are at risk for various health problems which were proven and supported by many research studies.

Objectives: The main objectives of the study are to assess the respiratory problems among Traffic Policemen, and to find out the association between respiratory problems among Traffic Policemen with selected demographic variables and to develop an Information Booklet on the prevention of respiratory problems.

Methods: Descriptive Cross-sectional design was used and all the seven Traffic Branches of East Khasi Hills District, Meghalaya was taken to recruit targeted population, during 1st March to 27th March 2021. About 145 participants were enrolled for the study and a semi-structured tool by interview method was used for the collection of data. Data was analyzed using descriptive and inferential statistics. According to the objectives of the study, the Information Booklet on prevention of respiratory problems was developed under the guidance of the Guide after which the Information Booklet was distributed to the participants.

Results: The present study reveals that out of 145 participants who participated in the study, 54(37.2%) are having respiratory problems where 28(19.3%) experienced Rhinitis, 26(17.9%) experienced Cough, 18(12.4%) experienced Phlegm production, 7(4.8%) experienced Shortness of Breath and 3(2%) experienced Wheezing. There was a significant association between current smoker and respiratory problems (p=0.008).

Conclusion: The study recommends that Health Education programme among Traffic Policemen should be strengthened to improve awareness regarding

occupational health and the hazards. Usage of personal protective equipment particularly face mask and regular medical checkup is highly recommended.

Keywords: Traffic Policemen, Respiratory Problems, Information Booklet.

Introduction

Occupational environment plays an important role in a person's health especially when a person is being exposed to extreme physical environment. This becomes more pronounced in situations where a person is engaged in traffic duty. These personnel are being exposed to various physical strains from the environment such as traffic noises, vehicles fumes, and dust blow by speeding vehicles. [1] From the analysis from various countries, it has revealed that there is high prevalence of respiratory problems among these working groups. [2]

Occupational health has been a focus worldwide and occupational lung diseases is one of the major contributing factor to global occupational disease burden. Occupational exposure to asthmagens is estimated to cause forty-two thousand deaths, with particulate matter, gases and fumes (PMGF) causing three lakhs fifty thousand (mainly COPD) and workplace injuries causing two lakhs deaths. [3]

Air Pollutants in the city are shooting up day by day even in relatively smaller cities. According to the times of India 11th June 2015, the District Commissioner of East Khasi Hills, Shillong, informed that the quality of air has deteriorated in Shillong city due to vehicular emissions and rise in population in addition to domestic and other sources of air pollution. [4] In the health checkup which was organized by BLK Super Specialty Hospital, New Delhi in June 2019 for 200 Traffic Policemen reported that out of 200 Traffic Policemen, 20% of them were vulnerable from moderate to severe health issues. The

Doctors further reported that at least one in five Traffic Policemen in Delhi were suffering from respiratory problems. The pulmonary function test revealed that nearly 35-40 of the 200 Traffic Policemen suffered from breathing problems. Lung congestion, asthma, and throat irritation were the common problems detected. [5] Most of the studies are conducted in the metro cities of India. However, there is no such literature found that the study has been conducted in the state of Meghalaya. Therefore, the Investigator feels the need to conduct the study.

The nurse plays an important role to assess the needs of both the individual as well as the groups and should have the ability to analyze, interpret, plan and implement actions to achieve the health of the individual and group.

Objectives

• To assess the respiratory problems among Traffic Policemen.

• To determine the association between the respiratory problems among Traffic Policemen with selected demographic variables.

• To develop Information Booklet on the prevention of respiratory problems.

Methodology

A cross sectional design was adopted among Traffic Policemen of seven Traffic branches of East Khasi Hills District Meghalaya. The Traffic branches were selected using Purposive sampling technique and 145 Traffic Policemen were selected using convenient sampling technique. The study was conducted from 1st March to 27th March 2021. Ethical clearance (NEIGR/IEC/M12/N7/2020) was obtained before starting of the study. Confidentiality was assured and informed consent was taken from the participants. Data was collected through interview using semi-structured questionnaires. The data was analyzed using Descriptive

(Frequency and percentage) and inferential statistics (chi square). According to the objectives of the study, the Information Booklet on prevention of respiratory problems was developed under the guidance of the Guide after which the Information Booklet was distributed to the participants.

Results

Section i: findings related to socio-demographic variables of the participants

Table 1: Frequency and percentage distribution of participants according to socio-demographic variables. n=145

Variables	Frequency(f)	(%)
Gender		
Male	143	98.6%
Female	02	1.4%
Age in years		
20-30	52	35.8%
31-40	63	43.4%
41-50	14	9.6%
51-60	16	11.0%
Marital status		
Married	104	71.7%
Unmarried	41	28.3%
Educational status		
Primary	01	0.7%
Secondary	27	18.6%
Higher secondary	84	58.0%
Graduate and above	33	22.7%

Table 2: Frequency and percentage distribution of participants according to their job profile. n=145

Variables	Frequency(f)	Percentage (%)
Years of working		
≤ 1	18	12.5%
2-3	16	11.0%
4-5	09	6.2%
≥ 6	102	70.3%
Designation		
Sub-Inspector	11	7.6%
Head Constable	08	5.5%
Constable	120	82.8%
Home guard	06	4.1%
Duration of working hours per day	33	22.8%
≤ 7	112	77.2%
≥ 8		
Place of working		
Sardar	37	25.5%
Lumdiengjri	25	17.2%
Madanrting	23	15.9%
Laitumkhrah	22	15.2%
Rynjah	16	11.0%
Mawlai	13	9.0%
Laban	09	6.2%

Figure 1: Distribution of participants according to smoking habits. N=145
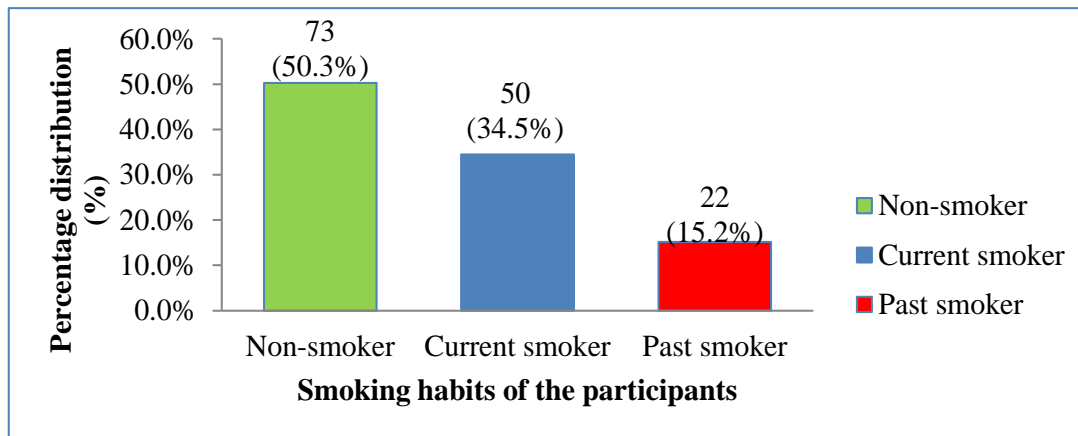
Section ii: findings related to history of past chest illness among traffic policemen

Figure 2: Distribution of participants according to history of past chest illnesses. n=145
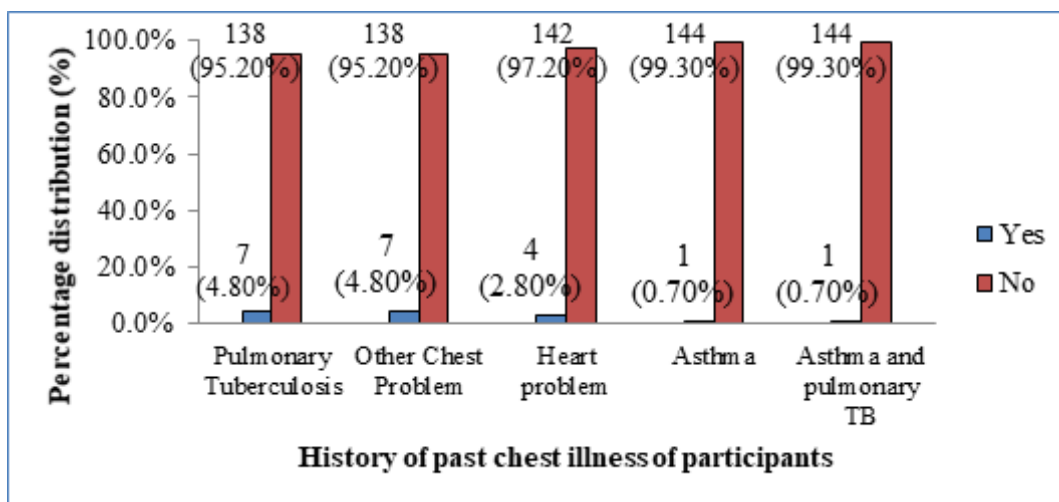
Distribution of participants according to past history of other chest problems:

Out of 7 participants who had past history of other chest Problems, 3(42.9) had chest pain, 2(28.5%) had sinusitis, 1(14.3%) had continuous cough and 1(14.3%) had breathing difficulty in the past.

Section iii: findings related with usage of protective face mask among traffic policemen.

Figure 3: Distribution of participants according to usage of protective face mask during duty hours. n=145
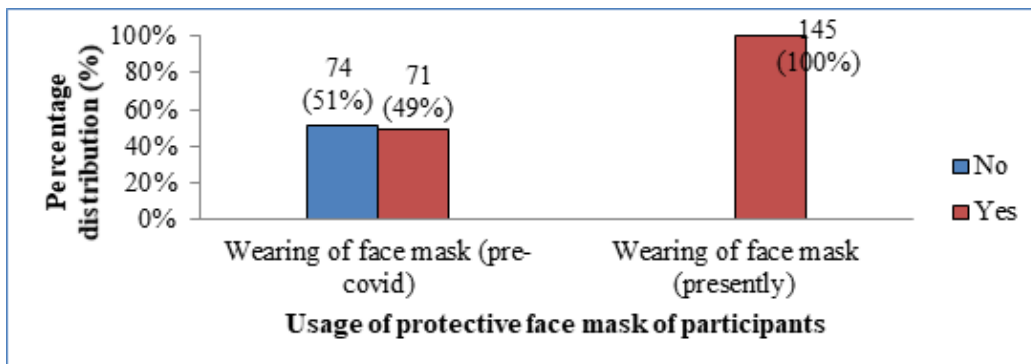
Table 3: Distribution of participants according to daily practice of wearing protective face mask. n=145

Variables	Frequency(f)	Percentage (%)
Duration of usage of face mask per day	12	8.3%
	133	91.7%
≤6 hours		
≥7 hours		
Type of mask		
Cloth mask	121	83.4%
N95 mask	07	4.8%
N95, surgical, cloth mask	07	4.8%
cloth mask	05	3.5%
Cloth, surgical mask	04	2.8%
	01	0.7%
Surgical mask		
N95, Cloth mask		
Frequency of using Daily	145	100%

Table 4: Reason for not using protective Face mask during Traffic duty (pre-covid pandemic) n=74

Reason for not using face mask	Frequency(f)	Percentage(%)
Uncomfortable to use because they have to blow whistle	35	47.3%
Unnecessary, as the area of work is not polluted	31	41.9%
Unaware of the importance of mask	08	10.8%

Section iv: findings related to assessment of respiratory problems

Table 5: Frequency and percentage distribution of participants according to presence of respiratory problems in the past one year. n=145

Variables	Frequency(f)	Percentage (%)
Respiratory symptoms	28	19.3%
Rhinitis	26	17.9%
Cough	18	12.4%
Production of sputum or mucus from the chest	07	4.8%
	03	2.0%
Shortness of breath		
Wheezing		
Presence of one or more of the respiratory symptoms	54	37.2%
Rhinitis	16	29.6%
Cough	11	20.4%
Sputum production	06	11.1%
Cough and sputum production	04	7.4%
Cough and rhinitis	03	5.5%
Cough, sputum production and rhinitis	03	5.5%
Cough, sputum production, shortness of breath, rhinitis	03	5.5%
Shortness of breath	02	3.7%
Wheezing	01	1.8%

Cough and shortness of breath	01	1.9%
Cough, Shortness of breath and rhinitis	01	1.9%
Wheezing and rhinitis	01	1.9%
Sputum production and rhinitis	01	1.9%
Sputum production and wheezing	01	1.9%

In this study, respiratory problems is considered as the presence of any one or more of the respiratory symptoms which are cough, production of mucus from the chest, shortness of breath, wheezing or rhinitis. The present study shows that out of 145 participants, 54 (37.2%) have respiratory problems.

Section v: findings related to presence of non-respiratory health problems

Table 6: Frequency and percentage distribution of participants according to presence of non-respiratory health problems. n=145

Variables	Frequency(f)	Percentage (%)
Presence of non-respiratory health problems	91	62.8%
No	54	37.2%
Yes		
Self-reported non-respiratory health problems	22	40.7%
Gastritis	04	7.3%
Itchy eyes	04	7.3%
Backache	03	5.5%
Gastritis and	03	5.5%

backache	02	3.6%
Headache	01	1.9%
Skin problem	01	1.9%
Diabetes	01	1.9%
Heart problem	01	1.9%
Haemorrhoids	01	1.9%
Itchy eyes and gastritis	01	1.9%
Itchy eyes and leg pain	01	1.9%
Itchy eyes and backache	01	1.9%
Gastritis and constipation	01	1.9%
Gastritis and leg pain		
Headache and leg pain		
Leg pain and backache		
Headache and backache		
Gastritis, heart problem, thyroid problem and diabetes		
Gastritis, headache and backache		

Section vi: findings related to the association between respiratory problems among traffic policemen with selected demographic variables

Table 7: Association between respiratory problems among Traffic Policemen with selected demographic variables. n=145

Demographic variables	Respiratory problems		df	χ^2 table value	χ^2 value	p- value
	Yes	No				
Age						
20-40 years	45(39.5%)	69(60.5%)	1	3.84	1.137	0.286
41-60 years	09(29.0%)	22(71.0%)				
Years of working						
≤10 years	38(37.3%)	64(62.7%)	1	3.84	0.000	0.996
≥11 years	16(37.2%)	27(62.8%)				
Designation						
Sub-Inspector	06(54.5%)	05(45.5%)	1	3.84	1.525	0.217
Constable	48(35.8%)	86(64.2%)				
Duration of working hours						
≤7 hours						
≥8 hours	15(41.7%)	21(58.3%)	1	3.84	0.401	0.526
	39(35.8%)	70(64.2%)				
Current smoker						
Yes	26(52.0%)	24(48.0%)	1	3.84	7.112	*0.008
No	28(29.5%)	67(70.5%)				

*Significant at 0.05 level of significance

Discussion

The major findings have been discussed with reference to the results obtained by other author in the same aspects.

The present study reveals that 37.2% of the participants have respiratory problems, with maximum participants (19.3%) were experiencing rhinitis which is consistent to the study conducted by Paresh Prajapati et. al (2015) where prevalence of respiratory problem was 31.53%, with maximum prevalence of 24.68% for rhinitis. [6]

In the present study, it was also found that 34.5% of the participants are current smoker which was similar to the study conducted by Thippana G and Laktakia, and Karita et. al., in which 37% to 43% of the participants are current smoker. [7][8] The present study also reveals that 23.1% are past smoker which is consistent to the study conducted by Shabana et. al. (2008) where 22.6% policemen had a habit of smoking. [9]

In regard with usage of protective face mask, the present study data shows that the percentage of participants who are using (49%) and not using (51%) face mask pre covid pandemic. This is contrast to the study conducted by Santosh J Haralkar et. al (2017) where the majority of the participants (76.32%) were not using any protective face mask. [10]

In regard with presence of non-respiratory problems, the present study reveals that most of the participants (40.7%) reported presence of gastritis which is totally contrast with the findings of the studies conducted by DM Sat apathy et. al (2009), [11] Elsa Mary (2013) [12] and Mukul Dhakal et. al (2017) [13] where they reported that most of the participants experienced musculoskeletal problem.

The participants who are currently smoking in the present study are 35.5%. The present study depicted that there was a significant association between the respiratory problems with smoking at 0.05 level of significance. However, there are no literatures found to determine the association between respiratory problems and smoking habits.

Conclusion

From the observation and findings of the present study, it is concluded that respiratory problems are present among the Traffic Policemen of Meghalaya. The smoking habits contributed to the development of respiratory problems. The respiratory problems can be prevented if the participants are informed and are motivated about the preventive strategies. This motivated the Investigator to develop an Information Booklet on the preventive strategies of respiratory problems.

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