Morbidity Profile of Traffic Police Personnel of Vidarbha Region of Maharashtra

Prafull Kumar Sahu[1], Farhad Mollick[2]

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Abstract

Background: Morbidity is a state of disease, disability, or poor health condition due to any cause; it may be referred to as the existence of a disease that affects the person's health condition. Traffic police personnel are involved inthe occupation of controlling traffic in urban areas. The physical and social environment of the workplace contributes a significant role in occupational health, as traffic police personnel spend at least 8 to 10 hours a day at work. That's why health is affected by the working environment to a large extent. The lifestyle and food culture likely contribute to the elevated morbidity pattern. Several studies indicate that police officer have a risk of increasing specific diseases related to their occupation and lifestyle.

Objective: To assess the morbidity pattern concerning the occupational health of traffic police personnel.

Material and Methods: The present study was conducted during the fieldwork of Phd, among the Traffic police personnel of Nagpur and Wardha district of Vidarbha region Maharashtra. The procedures contributing to this work comply with the ethical standard as per the University Ethical comitty. The traffic police personnel were told about the study's objective, and their written consent was obtained.

Result: The present study revealedsignificant differences in Age, Height, Weight, and Systolic and Diastolic blood pressure among males and females (p = 0.001). Out of 277 personnel, more than fifty percent of traffic police personnel suffered from Musculo skeleton disorder, followed by respiratory problems (17 percent), obesity, and eye related problem (both in 14.1 percent). 7.6 percent of traffic personnel suffered from skin infections, 7.2 percent from diabetes, 5.4 percent from heart problems, and 2.5 percent from hypertension (High blood pressure) was reported by the traffic police personnels. 26.02% personnels are Systolic and 45.37% personnels was found Diastolic hypertensive blood pressure category according to physiological measurement.

Keywords: Socio-Demographic Profile; Occupational Health; Weight; Hip Circumference; Blood Pressure; Morbidity; Correlation.

INTRODUCTION

Morbidity is a state of disease, disability, or poor health condition due to any cause. It may refer to an illness that affects the person's health condition. Traffic police personnel are people with outdoor occupations in urban areas. They

are engaged in controlling vehicular traffic at various squares and roads of the city and are typically exposed to a higher concentration of transport related problems. The place of work is a significant part of the working environment of the traffic police as he spends at least 8 to 10 hours a day at work. That's why health is affected by the work environment to a large extent. On average, police personnel work twelve hours daily and sometimes even put in 36 hours at a stretch during VIP bandobast and festivals. Unlike other jobs, police officers start the day with bad news (Sunil and Kamath, 2018). Police officers are exhausted because of air and noise pollution, insufficient sleep, and long working hours. Repeated exposure to air pollution increases the cumulative risk of respiratory and cardiovascular disease and even death. An imbalanced lifestyle and food pattern are likely to contribute to the elevated level of morbidity. Traffic police personnel have an increased risk of specific illnesses related to their occupation and lifestyle (Mishra, 2018).

The occupational environment plays a vital role in the health of the personnel. Every year 800,000 people die prematurely from lung cancer and cardiovascular and respiratory diseases caused by outdoor air pollution around the globe. Other adverse health effects include increased chronic bronchitis, acute respiratory illness, and lung function impairment (Haralkar & Gite, 2018).

Traffic police are continuously exposed to dust, vehicular exhaust, noise, fumes, ultraviolet radiation, heat, etc. The nature of work and stress makes them vulnerable to physical illness and mental disorders (Radhakrishna. et. al., 2016). Traffic personnel is exposed to higher health risk to ensure steady traffic among hundreds of noisy and polluting vehicles throughout their duty period. It increases the chance of health hazards and becomes more severe environmental pollution escalates occupational hazards in this group. (Mishra and Purushothama, 2019). Since occupation is a significant determinant of health, traffic police personnel face multiple occupational hazards. Standing for long hours in a static position makes them vulnerable to ergonomic problems. Outdoor occupations are generally hazardous due to prolonged exposure to high concentrations of vehicular pollution, putting employees at risk of respiratory and cardiovascular diseases. The most commonly reported respiratory symptom associated with traffic pollution among occupational groups

exposed to traffic pollution include bronchitis, asthma, wheezing, breathlessness, dry cough and with phlegm, reduced lung function, and other nasal problem. Respiratory disease due to traffic pollution increases with time (Singh 2019). Various factors keep traffic police personnel under constant workload, making it familiar for them to neglect their general health and, at times, engage in harmful habits which affect their health.

Objective

To assess the morbidity pattern of the traffic police personnel and the association of morbidity with occupational health.

MATERIAL AND METHOD

The present study was conducted during the fieldwork of Phd, among the Traffic police personnel of Nagpur and Wardha districts in the Vidarbha region of Maharashtra. A non-random sampling method was used to collect information from a total of 277 traffic police personnel consisting of 84.4 percent (234) males and 15.53 percent (43) females aged 25-58 years were recruited from their duty point of Nagpur and Wardha district of Vidarbha region of Maharashtra. Socio-demographic features, anthropometric measurements, and blood pressure were also collected for the present investigation.

The participant were inform about objective of the study, and written consent was obtained from the personnel. Prior permission was taken from the Superintendent of police Wardha and the Assitant Commissioner of Police, Nagpur district. After collecting the data. Microsoft excel and SPSS 23 (Statistical Package for Social Sciences) software were used for analysis and tabulation.

RESULT

The present study was carried out on 277 traffic police. All were included in the study. They were between 25 to 58 years of age. The mean age was 43.33 years. Forty percent of traffic police personnel were in the age group 31 to 40 years, about thirty percent were more than 50, and about twenty five percent were in the age group 41 to 50.

A negligible percentage of traffic police personnel (4.69%) were in the age below 30 years. It was also observed that out of 277 traffic police, 234 (84.47%) were male and 43(15.53%)

Table 1: Socio-demographic variable of traffic police personnel.

Socio-demographic characteristics	Category	Frequency N = 277 (100%)
Age	≤30	13 (4.69)
	31–40	112 (40.44)
	41–50	69 (24.90)
	≥50	83 (29.97)
Gender	Male	234 (84.47)
	Female	43 (15.53)
Educational status	Secondary	50 (18.07)
	Higher Secondary	87(31.40)
	Graduation	125(45.12)
	Post-graduation	15(5.41)
Marital status	Unmarried	11(4.4)
	Married	263 (95.6)
	Widow/Widower	1 (0.36)
	Divorced	2 (0.72)
Type of family	Nuclear	168 (60.6)
	Joint	109 (39.4)
Duty hours	8 hours	10 (3.6)
	12 hours	267 (96.4)
Duration of service in the year	1–10 years	59 (21.29)
	11–20 years	97 (35.01)
	21–30 years	75 (27.07)
	31–40 years	45 (16.24)
	41+ years	1 (0.36)
Addiction	Tobacco	121 (43.68)
	Smoking	27 (9.74)
	Drinking	109 (39.35)

were female. A good percentage of traffic police personnel (45.12%) were graduates. Thirty one percent of traffic police personnel have completed a higher secondary level of education, and eighteen percent have a secondary level of education. Only five percent were educated at the post-graduate level. It was also observed that out of 277 traffic police 263 (95.6%) were married and followed by 11 (4.4%) were unmarried, 2(0.72%) were divorced and 1 (0.36%) were widow/ widower. Most traffic police (60.6%) were from nuclear families, and 39.4 percent lived with joint families. Most of the traffic police (96.4%) were on duty time 12 hours a day, and 3.6 percent of respondents were doing only 8 hours a day. More than seventy percent of traffic police personnel completed ten years of service, and about forty five percent were doing their service for more than twenty years. Twenty one percent of traffic police personnel were in less than ten years of service. Forty three percent of traffic police personnel were consuming tobacco, about forty percent were drinking alcohol, and about ten

Table 2: Sex wise distribution of Anthropometric and physiological measurements of traffic police personnel.

	Mean ± SD		
Variables	Male (n, 234)	Female (n, 43)	t-test
Age	44.7 ± 8.84	35.6 ± 6.41	5.776**
Height	171.2 ± 7.11	160.9 ± 4.72	9.181**
weight	79.53 ± 11.12	65.7 ± 11.26	7.440**
SBP	132.3 ± 15.42	114.1 ± 12.85	7.266**
DBP	90.6 ± 11.39	78.7 ± 10.03	5.291**

SBP = SYSTOLIC Blood Pressure, DBP = Diastolic Blood Pressure
**p = <0.001

percent were smokers.

Table 2 shows that the mean age of male 44.7 years and female 35.6 years. Mean height of male 171.2 and female 160.9, mean weight of the male 79.53 and female 65.7, and mean of SBP in male 132.3 and female 114.1 similarly DBP in male 90.6 and female 78.7 was found. the study's findings revealed significant differences in Age, Height, Weight, and systolic and diastolic blood pressure among males and females (p = 0.001).

Table 3 shows that as per systolic blood pressure 22.8% Male and 69.8% Female were normal followed by 46.9% male and 25.6% female were found as pre-hypertensive whereas 30.3% male and 4.7% female were found on hypertention stage. Whereas

Table 3: Distribution of Systolic and Diastolic blood pressure.

JNC-8	Male		Female		Chi-square	Total	
	N	%	N	%		N	%
Systolic blood pressure (mmHg)							
Normal (90-119)	52	22.8	30	69.7		82	30.26
Prehypertension (120-139)	107	46.9	11	25.6	χ^2 = 39.289 df = 3 p = <0.001	118	43.54
Hypertention-I (140-159)	58	25.5	2	4.7		60	22.14
Hypertension-II (160-179)	11	4.8	0	0		11	4.06
Diastolic blood pressure (mmHg)							
Normal (60-79)	34	14.9	24	55.8		58	21.42
Prehypertension (80-89)	78	34.2	12	27.9	χ^2 = 38.705, df = 3 p = <0.001	90	33.21
Hypertension-I (90-99)	77	33.8	6	14		83	30.61
Hypertension-II (100-109)	39	17.1	1	2.3		40	14.76
Total	228	100	43	100		271	100

JNC – Joint National Committee-8 (2014)

on the basis of diastolic blood pressure 14.9 male and 55.8% female were normal and 34.2% male and 27.9% female were pre-hypertensive followed by 50.9% male and 16.3% female hypertensive. Systolic and diastolic blood pressure category such as normal, pre-hypertension, hypertention–I

Musculo skeletal disorder	158	57
Obesity	39	14.1
Eye problem	39	14.1
Skin problem	21	7.6

and hypertetion-II were statistically significant. (p=<0.001)

Table 4 on morbidity pattern shows that many traffic police personnel (57 percent) suffered from muscular skeletal disorders. It was also observed that seventeen percent of traffic police personnel suffered from respiratory disease, fourteen percent each from obesity and eye related problems, and seven percent from skin disease and diabetes. Five

Table 4: Morbidity pattern

Health Problem	Responses	
	N	%
Respiratory disease	47	17
Heart disease	15	5.4
High blood pressure	7	2.5
Diabetes	20	7.2

Table 5: Correlation matrix for Health problem, Anthropometric measurement and Hypertension

Correlations	Health problem in the last year	Height	Weight	Waist circumfarence	Hip circumfarenc	SBP	DBP
Health problem in the last year	1	0.06	–0.06	—	0.05	—	0.02
Height	—	1	0.44**	0.14*	–0.01	0.19**	0.18**
Weight	—	—	1	0.70**	–0.12*	0.36**	0.25**

Table Cont.....

Waist circumfarence	–	–	–	1	0.17**	0.21**	0.11
Hip circumfarence	–	–	–	–	1	-0.01	-0.03
SBP	–	–	–	–	–	1	0.78**
DBP	–	–	–	–	–	–	1

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

SBP= SYSTOLIC Blood Pressure, DBP= Diastolic Blood Pressure

percent of traffic police personnel suffered from Heart related issues, and 2.5 percent were reported as high blood pressure.

Table 5 shows that relationship of height with weight ($r^2 = 0.44$), Waist circumference ($r^2 = 0.14$), SBP ($r^2 = 0.19$), DBP ($r^2 = 0.18$). weight with waist circumference ($r^2 = 0.70$), SBP ($r^2 = 0.36$), DBP ($r^2 = 0.25$), waist circumference with hip circumference ($r^2 = 0.17$), SBP ($r^2 = 0.21$) The Pearson correlation coefficient was found positive and significant. And between weight and hip circumference wasfound negative and significant ($r^2 = –0.12$, $p<0.05$).

DISCUSSION

The present study was conducted to determine the Morbidity Profile of traffic police personnel of the Vidarbha region of Maharashtra, India. In the present study, respondents belong to the age group of 25 to 58 years. Mishra and Purushothama (2019) conducted a study of traffic personnel of the age group between 20-60 years. In this study, most subjects were males (84.4%). The overall prevalence of respiratory morbidity was 17%. The study also showed that more than fifty percent of traffic personnel ((51.2%.) of Mangluru city suffered from occupational hazards and health problems.

The present study indicated that the prevalence of heart disease was 5.4%, and high blood pressure was 2.5% in traffic police personnel. It revealed that the prevalence of heart disease is more than the result (4.7%) of the study by Almale et al. (2015), but blood pressure is less than the result of the study conducted by Almale et al. (2015) and Deepadarshan and Hiremath (2017).

The study indicated that 7.2 percent of traffic police personnel suffered from diabetes. The study on police personnel by Sunil and Kamath (2018) and Haralkar and Gite (2018) observed that diabetes among traffic police personnel was 23 percent and 8.8 percent, respectively.

The result of the present study showed that the musculoskeletal disorder of traffic personnel was 57 percent. Sunil and Kamatha (2018) pointed out that musculo skeletal problem was found in 46 percent of traffic police personnel, while Almale et al.(2015) reported 62.3 percent.

The present study revealed that the prevalence of obesity among the traffic police personnel was 14.1 percent, while Haralkar and Gite (2018) stated 63.2 percent of traffic police personnel in western Maharashtra were of obesity.

It observed that 14.1 percent of traffic police personnel of the Vidarbha region in Maharashtra suffered from eye problems. In Magaluru city, it was 61.7%(Mishra and Purushothama, 2019). Thus, the eye problems among the traffic police personnel of the Vidarbha region of Maharashtra were lower compared to the Magaluru city contemporaries. It is because of the streets' cleanliness, traffic density, and vehicular air pollution exposure.

In the present study, the prevalence of skin problems was found to be 7.6 percent. Almale et al. (2015) stated that the prevalence of skin problems among traffic police personnel in the Mumbai district was 17.8 percent. The prevalence of skin problems among the traffic police personnel of the Vidarbha region was lower when compared to the Mumbai district. Skin problems of traffic police personnel caused due to exposure to sunlight and prolonged standing and radiation.

CONCLUSION

The present study was conducted on traffic police personnel of the Vidarbha region in Maharashtra. It was observed that the traffic police personnel suffered from respiratory disease (17%), heart disease (5.4%), high blood pressure (2.5%), diabetes (7.2%), musculoskeletal disorder (57%), obesity (14.1%), eye problem (14.1%), and skin problems (7.6%). Their health problems result from

prolonged exposure to vehicular pollution and a lack of awareness and negligence about personal health. It can become a barrier to performing their duties efficiently.

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