

## ORIGINAL RESEARCH ARTICLE

DOI: 10.26727/NJRCM.2019.8.2.103-107

Year: 2019 Vol: 8 Issue: 2. Apr.-Jun. Page: 103-107

### A study on socio-demographic profile and morbidity pattern of traffic policemen in an urban area of Madurai city, Tamilnadu

Vijayakumar Munisamy<sup>1\*</sup>, E.Cowshik<sup>2</sup>

**Affiliation:** 1.Assistant Professor & 2.Postgraduate, Institute of Community Medicine, Madras Medical College, Chennai – 03.

**Date of Submission** : 14-02-2019

**Date of online Publication** : 27-05-2019

**Date of Acceptance** : 26-04-2019

**Date of Print Publication** : 30-06-2019

**\*Author for correspondence:** Dr. Vijayakumar Munisamy, Assistant Professor, Institute of Community Medicine, Madras Medical College, Chennai – 03. E-mail: drvijaym12@gmail.com

#### ABSTRACT

**Background:** The occupational environment plays a major role on the health of workers and the severity increases with increase in duration of exposure. Traffic policemen are one of the most vulnerable groups to various illnesses as they are exposed to dust, noise, fumes, ultra-violet radiation during their work. **Objectives:** To assess the morbidity pattern and the health seeking behavior among the traffic policemen in Madurai city. **Methods:** A cross sectional study was conducted from August to November 2017 among 239 traffic policemen in Madurai city using a pretested, semi structured, questionnaire for interview and clinical examination. Data were entered in Excel and analyzed using SPSS version 16. **Results:** About 88% of the study participants underwent regular master health checkups of which 76% of the study participants had master health checkups once a year. Government hospitals were being accessed by 69% of traffic policemen. 29.3% were suffering from hypertension, 26.8% were suffering from respiratory problems, 25.1% suffered from gastrointestinal problems, 22.2% suffered from Musculoskeletal disorders, 10.9% had varicose veins. There was a significant association between BMI and varicose veins ( $P = 0.001$ ) and age with hypertension ( $P = 0.007$ ) and also age with diabetes mellitus ( $P = 0.01$ ). **Conclusion:** Hypertension, respiratory problems and gastrointestinal problems were found to be the major health problems among the traffic policemen. Lifestyle modification and importance of maintaining normal weight can be educated to all traffic policemen. Implementation of health insurance schemes and periodical health checkups shall be conducted. Health education and counseling sessions shall be done regularly to traffic policemen.

**Key Words:** Traffic policemen, morbidity pattern, health seeking behavior

#### INTRODUCTION

The occupational environment plays a major role on the health of workers and the severity increases with increase in duration of exposure. In the last decade, the traffic population has grown enormously and there is an increase in vehicular traffic polluting the atmosphere. The traffic policemen play a significant role to ensure a smooth flow of traffic. Untimed eating habits, stressful job environment, near sedentary life style as they stand in one place for most of the day have increased their risk of non-communicable diseases.<sup>1,2</sup>

Human activity, industrialization and rapid urbanization have resulted in increase in outdoor air pollution which causes harmful effects which may appear as acute health effects or on a later stage as chronic debility. The health effects of air pollution can be respiratory illness such as asthma, lung cancer, change in lung functions, aggravation of preexisting cardiovascular and respiratory diseases, arrhythmia, heart failure, irritation of eyes nose throat, headache, fatigue.<sup>3-6</sup>

Noise pollution is another environmental hazard which has detrimental health hazards.<sup>7</sup> Health effects of

noise include both the auditory as well as non-auditory effects.<sup>8</sup> Even though the Government is providing health checkups to assess their health status, the morbidity pattern of traffic policemen is the need of the hour so that appropriate preventive measures can be recommended. **Objectives:** To assess the morbidity pattern of traffic policemen in Madurai city 2.To assess the health seeking behavior among traffic policemen.

#### MATERIAL AND METHODS

A cross sectional study was conducted over a period of four months from August to November 2017 among the traffic policemen in Madurai city. Out of the cities of Tamilnadu, Madurai was selected by convenient sampling method. Ethical clearance was obtained from the Institutional Ethical Committee, Madras Medical College, Chennai. Official permission to conduct the study was obtained from the Commissioner of police, Madurai after explaining about the need for the study. Traffic policemen who had been involved in regulating traffic for more than 6 months were included in

the study. Universal sampling frame was prepared by obtaining the list of all traffic policemen meeting the inclusion criteria from Madurai Traffic department. As on 1.7.2017, 256 traffic policemen met our inclusion criteria.

**Table 1. Socio-demographic details of the respondents (n = 239).**

| Socio-demographic details      | Frequency (%)                  |
|--------------------------------|--------------------------------|
| Age ( in years)                | 20-29 2 (0.8)                  |
|                                | 30-39 52 (21.8)                |
|                                | 40-49 79 (33.1)                |
|                                | 50-59 106 (44.4)               |
| Gender                         | Male 235 (98.3)                |
|                                | Female 4 (1.7)                 |
| Marital Status                 | Married 237 (99.2)             |
|                                | Unmarried 2 (0.8)              |
| Education                      | High School 127 (53.1)         |
|                                | Undergraduate 99 (41.4)        |
|                                | Postgraduate 13 (5.4)          |
| Occupation                     | Police Constable 21 (8.8)      |
|                                | Head Constable 115 (48)        |
|                                | Sub Inspector 95 (40)          |
|                                | Inspector 6 (2.5)              |
|                                | Assistant Commissioner 2 (0.7) |
|                                |                                |
| Years Of Experience (in years) | 1-3 117 (49)                   |
|                                | 4-6 88 (36.8)                  |
|                                | 7-9 21 (8.8)                   |
|                                | 10-12 13 (5.4)                 |

**Table 2. Distribution of study participants according to the personal habits (n=239)**

| Self-reported Practices     | Frequency (%) |
|-----------------------------|---------------|
| Smoking                     | 27 (11.3)     |
| Alcohol                     | 20 (8.4)      |
| Tobacco chewing             | 9 (3.8)       |
| Without any personal habits | 183(76.5)     |

**Table 3. Distribution of study participants according to the BMI (n=239)**

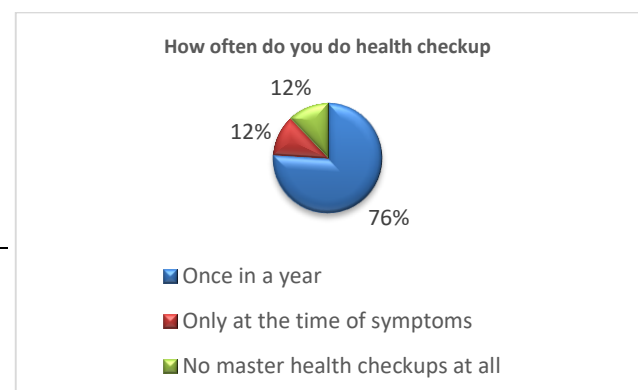
| BMI                     | Frequency (%) |
|-------------------------|---------------|
| Normal (18.5-24.99)     | 93 (38.9)     |
| Overweight( ≥25- 29.99) | 129 (54)      |
| Obese (≥ 30)            | 17 (7.1)      |

There were 6 traffic police stations in Madurai and the Inspectors of all the traffic police stations were briefed about the study in advance and were requested to assemble the policemen in their station on a particular day and time. Each police station was visited during the

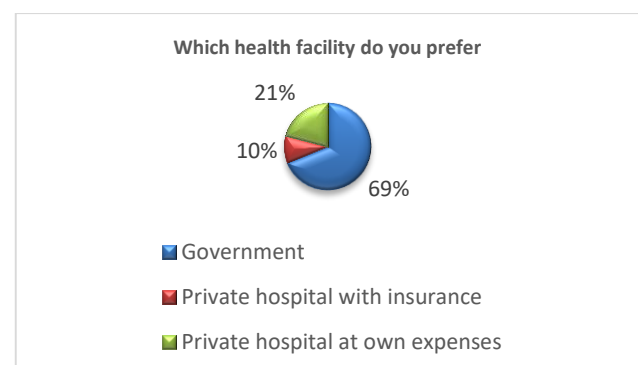
**Table 4. Distribution of study participants according to the Morbidity pattern**

| Health condition          | Frequency (%) |
|---------------------------|---------------|
| Hypertension              | 70 (29.3)     |
| Respiratory problems      | 64 (26.8)     |
| Gastrointestinal problems | 60 (25.1)     |
| Known case of Diabetes    | 59 (24.7)     |
| Joint pain                | 53 (22.2)     |
| Back pain                 | 53 (22.2)     |
| Eye sight defects         | 27 (11.3)     |
| Varicose veins            | 26 (10.9)     |
| Recurrent Headache        | 24 (10)       |
| Redness of eye            | 17 (7.1)      |
| Heart disease             | 11 (4.6)      |
| Asthma                    | 10 (4.2)      |
| Hearing defects           | 9 (3.8)       |
| Renal colic               | 6 (2.5)       |
| Skin disease              | 3 (1.3)       |
| History of Tuberculosis   | 0             |

**Figure 1. Frequency of master health checkups among the study participants**



**Figure 2. Preference of health facility among study participants**



prefixed date. Traffic policemen who gave informed written consent were interviewed. The data collection procedure included interview by questionnaire and clinical examination. Pretested, semi-structured questionnaire was used for interview. Height, weight, waist circumference, hip circumference and blood pressure were measured. A systolic blood pressure >140

Table 5. Association of BMI, age and experience with Hypertension, Diabetes and varicose veins

| Variables                  |             | Hypertension |        | Diabetes |        | Varicose veins |
|----------------------------|-------------|--------------|--------|----------|--------|----------------|
|                            |             | Hypertensive | Normal | Diabetic | Normal | Present        |
| <b>BMI</b>                 | Normal      | 22           | 71     | 22       | 71     | 2              |
|                            |             | 23.70%       | 76.30% | 23.70%   | 76.30% | 2.20%          |
|                            | Overweight  | 41           | 88     | 29       | 100    | 20             |
|                            |             | 31.80%       | 68.20% | 22.50%   | 77.50% | 15.50%         |
|                            | Obese       | 7            | 10     | 8        | 9      | 4              |
|                            |             | 41.20%       | 58.80% | 47.10%   | 52.90% | 23.50%         |
| P value                    |             | 0.215        |        | 0.09     |        | 0.001*         |
| <b>Age group</b>           | 20-29 years | 0            | 0      | 2        | 0      | 2              |
|                            |             |              |        | 100%     |        | 100%           |
|                            | 30-39 years | 9            | 5      | 48       | 3      | 50             |
|                            |             | 17%          | 9.40%  | 90.60%   | 5.70%  | 94.30%         |
|                            | 40-49 years | 19           | 22     | 57       | 9      | 70             |
|                            |             | 24.10%       | 27.80% | 72.20%   | 11.40% | 88.60%         |
|                            | 50-59 years | 42           | 32     | 73       | 14     | 91             |
|                            |             | 40%          | 30.50% | 69.50%   | 13.30% | 86.70%         |
|                            |             | 0.007*       | 0.01*  |          | 0.49   |                |
|                            |             |              |        |          |        |                |
| <b>Experience category</b> | 1-3 years   | 40           | 28     | 89       | 15     | 102            |
|                            |             | 34.20%       | 23.90% | 76.10%   | 12.80% | 87.20%         |
|                            | 4-6 years   | 19           | 21     | 67       | 7      | 81             |
|                            |             | 21.60%       | 23.90% | 76.10%   | 8%     | 92%            |
|                            | 7-9 years   | 7            | 6      | 15       | 2      | 19             |
|                            |             | 33.30%       | 28.60% | 71.40%   | 9.50%  | 90.50%         |
|                            | 10-12 years | 4            | 4      | 9        | 2      | 11             |
|                            |             | 30.80%       | 30.80% | 69.20%   | 15.40% | 84.60%         |
|                            |             |              |        |          |        |                |
|                            |             |              |        |          |        |                |
| P value                    |             | 0.23         |        | 0.87     |        | 0.61           |

\*Fischer's Exact Test

mm Hg or Diastolic blood pressure > 90mm Hg were taken as hypertension. Varicose veins were checked by Trendelenberg test. Those who were on long leave, who were on deputation to other department/city and those who were not available on 3 consecutive visits were excluded from the study. Hence a total of 239 responses were obtained.

The data was entered in MS Excel and was analyzed using SPSS version 16. Descriptive statistics such as proportions, mean, and standard deviation (SD) were used and inferential statistics such as Fischer's exact test and Chi square test were used. P value < 0.05 was considered significant. Data were expressed in graphs, tables and charts wherever necessary.

## RESULTS

Out of the 239 participants, 21 were police constables, 115 were head constables, 95 were sub inspectors, 6 were inspectors and 2 were Assistant Commissioners. The Mean age of the study participants was found to be  $47 \pm 7.7$  Years. 98.3 % of them (235) were male and almost all (99.2%) were married. Regarding education, 5.4% had completed

post-graduation. The median years of experience was found to be 4 years. Mean hours of duty daily was  $8.27 \pm 0.55$  hours and the mean monthly income was Rs.33890  $\pm$  5978. (Table 1)

About 11.3% of study participants reported as smokers and 8.4% of study participants reported as alcoholics. 3.8% used tobacco in chewable form. Remaining 76.5% of study participants mentioned they have not used tobacco or alcohol previously or in the present. (Table 2)

The Mean height of the study participants was found to be  $171 \pm 3.2$  cms and the mean weight was found to be  $76.9 \pm 8.8$  kgs. The mean systolic BP was found to be and the mean diastolic BP was found to be . On measuring the BMI among the traffic policemen, 7.1% (17) were found to be obese and 54% (129) were found to be overweight. (Table 3)

About 88% of the study participants underwent regular master health checkups of which 76% of the study participants had master health checkups once a year. 12% of the study participants said they visit a health facility only at the time of symptoms.(Fig.1)

Government hospitals were being accessed by 69% of traffic policemen and private hospitals with insurance were approached free of cost by 10% of the study participants. 21% of the study participants mentioned that they accessed private hospital at their own expenses.(Fig.2)

Among study participants, 29.3%(70) were suffering from hypertension. Out of the 70 hypertensive, 60 were on regular treatment. Remaining 10 participants had an irregular treatment history with antihypertensive drugs. 26.8% were suffering from respiratory problems like cough with expectoration, breathlessness, dry cough, running nose, sneezing and 4.2% reported as known asthmatic on treatment. 24.7% were suffering from diabetes mellitus. 25.1% suffered from gastrointestinal problems like gastritis, acidity, indigestion, constipation, flatulence, irregular bowel habits, decreased appetite, and abdominal distension. Musculoskeletal disorders like back pain and joint pain were reported by 22.2%. 11.3% had eye sight defects including myopia, presbyopia and 7.1% had redness of eye. 10.9% had varicose veins. 4.6% had heart disease including angina, previous treated MI of which they were on regular treatment. 3.8% of study participants had hearing defects like reduced hearing and also tinnitus to loud noise. 2.5% had renal colic and also 1.3% had skin problems like eczema, rashes and fungal infections. (Table 4)

There was a significant association between BMI and varicose veins ( $P = 0.001$ ) and age with hypertension ( $P = 0.007$ ) and also age with diabetes mellitus ( $P = 0.01$ ). However there is no significant association between experience and hypertension, diabetes, varicose veins. (Table 5)

## DISCUSSION

Occupational hazards now play a major role in the health of individuals. Traffic policemen owing to their occupation are constantly toiling for long hours of duty daily in the scorching sun. Madurai, a major city in India, owing to its cultural and religious background has an increasing number of automobiles. Increase in number of vehicles and rapid urbanization leads to irregular diet habits, prolonged standing in the sun and less self care owing to health hazards among the traffic policemen.

Self reported smoking was found to be 11.3% in our study. This was similar to studies done by Santosh.J.Haralkar et al in Solapur which showed smoking addiction of 7.02%.(9) In our study alcohol addiction was found to be 8.4% similar to studies done by Santosh.J.Haralkar et al in Solapur and Ravindra et al in Thane which showed alcohol addiction to be 18.42% and 8.95% respectively. Tobacco chewing was found to be 3.8% in our study whereas studies done in Solapur and Thane showed 21.93% and 26.87% respectively(9)(10). Similar results were also seen in a study done in Ahmadabad which showed addiction of smoking, alcohol

and tobacco chewing to be 23%, 12% and 28% respectively(11). Smoking seemed to be the major addiction than tobacco chewing in our study.

In our study 7.1% was found to be obese and 54% were found to be overweight. BMI greater than 25 were taken as overweight and greater than 30 were taken as obese in our study. Similar results were found in studies conducted in Thane which showed 50.74% of participants as overweight and none as obese(10). A study conducted in Brahmapur showed 38.3% of participants as overweight and 8.5% as obese(2). Similar study conducted in Solapur showed 63.16% of traffic policemen having BMI more than 25(9).

In our study 88% of study participants underwent regular health checkups of which 76% of study participants had master health checkups once a year. Majority of traffic policemen (69%) access Government hospitals at the time of complaints and for health checkups. Private hospitals are being accessed by 10% of participants under insurance coverage. 21% of traffic policemen visit private hospitals at their own expenses (out of the pocket expenditure).

In our study, 29.3% of traffic policemen (70) were suffering from hypertension. This was similar to a study done in Brahmapur which showed 25% of subjects were hypertensives(2). Similar studies done in Ahmadabad and Thane showed hypertensive as 18% and 8.95% respectively(11)(2).

In our study 26.8% were suffering from respiratory problems like cough with expectoration, breathlessness, dry cough, running nose, sneezing and asthma. Similar studies done in Solapur, Ahmadabad, Thane, Brahmapur showed prevalence of respiratory problems as 27.19%, 21%, 11.9%, and 16% respectively(2,9–11).

In our study 24.7% were suffering from diabetes mellitus. Similar studies done in Solapur, Ahmadabad and Thane showed prevalence of diabetes as 8.7%, 7% and 1.4% respectively(9–11).

And 25.1% suffered from gastrointestinal problems like gastritis, acidity, indigestion, constipation, flatulence, irregular bowel habits, decreased appetite, and abdominal distension. Studies done in Thane and Solapur showed 50.75% and 11.4% respectively(9,10). Musculoskeletal disorders like back pain and joint pain were reported by 22.2%. Studies done in Thane, Brahmapur, Solapur were found to be 37.3%, 27.08%, 20.18%(2,9,10). In our study 10.9% (26) had varicose veins. Studies done in Ahmadabad and Brahmapur showed 20% and 4.1% respectively(2,11).

In our study, there was a significant association between BMI and varicose veins, however there was no significant association between BMI and hypertension which was similar to the study done in Brahmapur which did not show a significant association(2).

In our study, there was a significant association between age and hypertension and also age with diabetes mellitus. This was similar to a study done in Ahmadabad

which showed significant association between age and hypertension among traffic policemen(11).

In our study, there was no significant association between years of experience and hypertension, diabetes, varicose veins. This is different from the study done in Ahmadabad which showed a significant association between years of experience and varicose veins(11).

#### Conclusion:

Hypertension, respiratory problems and gastrointestinal problems were found to be the major health problems among the traffic policemen. 54% were found to be overweight and 7.1% were found to be obese. Lifestyle modification and importance of maintaining normal weight can be educated to all traffic policemen. Implementation of health insurance schemes and periodical health checkups shall be conducted. Health education and counseling sessions shall be done regularly to traffic policemen.

#### Acknowledgment:

The authors sincerely acknowledge our Dean, Madras medical college, Chennai and Our Director, Institute of Community Medicine, and all Faculty members, Madras Medical College, who were us supporting us to do the work.

#### REFERENCES

1. Kumar GR, Mohan SR. Work Stress for Traffic Police in Chennai City. J Contemporary Res Manag. 2009;4:107–15.
2. Satapathy D, Behera T, Tripathy R. Health status of traffic police personnel in Brahmapur city. Indian J Community Med [Internet]. 2009;34(1):71. Available from: <http://www.ijcm.org.in/text.asp?2009/34/1/71/45380>
3. Ranganadin P, Chinnakali P, Vasudevan K, Rajaram M. Respiratory Health Status of Traffic Policemen in Puducherry, South India. Int J Cur Res Rev. 2013;5(7).
4. Ingle ST, Pachpande BG, Wagh ND, Patel VS, Attarde SB. Exposure to vehicular pollution and respiratory impairment of traffic policemen in Jalgaon City, India. Ind Health. 2005;43(4):656–62.
5. Bhairahawa N. Evaluation of pulmonary function tests on non smoking traffic police men at Tirupati, AP, India. Int J Physiother Res. 2013;1(5):279-82.
6. Sood V, Sood S, Bansal R, Sharma U, John S. Traffic related CO pollution and occupational exposure in Chandigarh, India. Int J Environ Sci. 2014;5(1):170–80.
7. Prajapati P, Modi K, Rahul K, Shah A. A Study

Related to Effects of Job Experience on Health of Traffic Police Personnel of Ahmedabad City, Gujarat, India. Int J Interdiscip Multidiscip Stud [Internet]. 2015;2(6):127–33. Available from: <http://www.ijims.com>

8. Venkatappa KG, Vinutha Shankar MS, Annamalai N. Assessment of knowledge, attitude and practices of traffic policemen regarding the auditory effects of noise. Indian J Physiol Pharmacol. 2012;56(1):69–73.
9. Haralkar SJ, Gite RN. Study of socio-demographic factors and morbidity profile of traffic policemen in Solapur city of Maharashtra. Int J Community Med Public Heal. 2018;5(1):122–8.
10. Gurav B. Morbidities among Male Traffic Personnel In A Metropolitan City. Int J Sci Res. 2015;10(2277):510–1.
11. Punit G BD V. Study of the Morbidity Pattern in Traffic Police in Ahmedabad City. Glob J Res Anal. 2014;3(9):106–7.

**Conflict of Interest : None**

**Source of funding support: Self**

**How to cite this article:** Vijayakumar Munisamy, E.Cowshik. A study on socio-demographic profile and morbidity pattern of traffic policemen in an urban area of Madurai city, Tamilnadu. Nat J Res Community Med 2019;8(2): 103-108.

© Community Medicine Faculties Association-2019  
NJRCM: [www.commedjournal.in](http://www.commedjournal.in)

