

Awareness of Air Pollution and Related Health Risk in Traffic Police of Pune City-A Pilot Study

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Abstract

Objective: Urbanisation is causing increase in air pollution. Exposure to air pollution has become inevitable and seem to be integral part of daily life. Few people like traffic police are exposed to air pollution for longer duration due to their type of job. Hence, they are more vulnerable to health hazards caused by air pollution. Awareness about air pollution and health hazards caused by it will help to plan preventive measures. Therefore, present study is planned to find out awareness of air pollution and related health risk in traffic police of Pune city.

Method: The questionnaire including questions about awareness of air pollution, associated symptoms and self-preventive measures against air pollution was constructed. The questionnaire was filled by the traffic policemen.

Results: Perception of air pollution is better in participants. 94% participants know that air pollution causes health hazard. 76% subjects take self-preventive measures. Participants were also having better knowledge of causes of air pollution. Only 20% participants had knowledge about air pollution monitoring system installed in city.

Conclusion: Traffic police of Pune city have good awareness regarding causes and levels of air pollution. Also, they know about health hazards due to air pollution and most of them take care in form of mask to avoid exposure to it. But they have got poor knowledge about air pollution monitoring system installed in city.

Keywords: Air pollution, Hazards of air pollution, Traffic police.

Introduction

Air pollution is the contamination of the air present in the healthy atmosphere with particulate substances, harmful fumes, vehicular emissions, smoke released by industries and the list continues. In the era of modernization and development there is a high increase in number of factories, building and not to forget the most necessary the vehicles, these become the cause of concern as it is the major source of air pollution.

Exposure to urban air pollution is one of the several environmental and public health concerns currently confronting the world's population¹. Several studies have established an association between air pollution and health effects²⁻⁴. Exposure to air pollution leads to adverse health effects ranging from respiratory illness to chronic illness such as cancer, adverse pregnancy outcomes and premature death. About 3.3 million premature deaths are attributed to both indoor and outdoor air pollution yearly and the burden is high among those living in middle-income countries⁵.

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The people most affected by this are ones who work in such atmosphere. People in various professions ranging from construction site workers to traffic policemen all experience various symptoms because of this.

Awareness is an important component of behavior change and plays a major role in public response to environmental exposures⁶⁻⁸. Therefore, increasing people’s awareness and knowledge is a cornerstone for interventions promoting protective behavior.

Hence the present study is planned to find out awareness of air pollution and related health risk in traffic police of Pune city.

Material and Method

It was a cross sectional study. Study was conducted in traffic police persons in Pune city.

A total number of 50 traffic policemen were selected as per the inclusion and exclusion criteria.

Selection Criteria:

1. Should be a traffic individual working outdoors.
2. Should be physically and mentally fit to answer the questionnaire.

Exclusion Criteria:

1. Policemen working in police station

Ethical considerations: Institutional ethical committee approval was obtained for the study.

Data collection procedure: The questionnaire with questions about awareness of air pollution, associated symptoms and self-preventive measures against air pollution was constructed. The questionnaire was distributed to the traffic policemen and got it filled from them. Legal permission was taken from the police authorities to carry out the questionnaire based study.

The police individuals working at traffic signals were chosen for this study as they have to work outdoors. Policemen working at police station were not considered as their exposure to air pollution is less. The study was carried out in traffic policemen working in the day time.

The responses of all questionnaire’s were analyzed to find about air pollution awareness amongst traffic policemen.

Statistical analysis: It was done using percentage.

Observations and results: Mean age of the participants is 38.04 ±9.47

Table 1: Perception of levels of air pollution

Perception of levels of air pollution	No of subjects	Percentage
High	23	46%
Moderate	27	54%
Low	0	0%

As observed in table 1 maximum participants perceived air pollution levels as moderate.

Table 2: Major causes of air pollution (A) Factories (B)Combustion (C)Automobiles (D)Burning of waste (E)Construction

Major causes of air pollution	No of subjects	Percentage
C	38	76%
B	1	2%
B, D	1	2%
C, D	4	8%
A, C	1	2%
A, B, C, D, E	5	10%

As observed in table 2, maximum participants think that use of automobiles is major cause of air pollution.

Table 3: Does air pollution cause any effect on health?

Does air pollution cause any effect on health?	No of subjects	Percentage
Yes	47	94%
No	2	4%
No Response	1	2%

As observed in table 4, 94% subjects says that air pollution causes health hazards.

Table 4: Symptoms of health hazard experienced by participants

Symptoms	No of responses	Percentage
Breathlessness	16	32%
Cough	3	6%
Others	18	36%
No Response	13	26%

As observed in table 5, most of the participants experienced breathlessness as major symptom due to air pollution.

Table 5: Can air pollution be measured?

Can air pollution be measured?	No of subjects	Percentage
Yes	14	28%
No	36	72%

As observed in table 6 only 28% subjects were knowing that air pollution can be measured.

Table 6: Does Pune city have air pollution measurement system and display of the same?

Does Pune city have air pollution measurement system and display of the same?	No of subjects	Percentage
Yes	10	20%
No	1	2%
Don't know	39	78%

As observed in table 7 only 20% subjects were knowing about air pollution measurement and display system in city, whereas 78% had no knowledge about it.

Other findings of the study:

1. 76% subjects take self-preventive measures against air pollution.
2. According to 28%, the most polluted area in Pune city is Swargate. Majority of the responses included Swargate as the most polluted area. Other areas were Pune station, Laxmi road, Katraj, Jedhe chowk, Highways, City area and Shivajinagar.
3. 78% of the traffic policeman work outdoors daily for 12 hours. About 8% work outdoors for 14 hours. So we can say majority of the study population works outdoors daily for 12 hours.
4. 92% have said that levels of air pollution have increased since they joined the service, which is suggestive that there is constant rise in the levels of air pollution over the years.
5. When it was asked regarding measures to prevent air pollution, majority of the responses included use of masks. Some of them included exercise and yoga. Few included plantation of trees, use of CNG vehicles, more use of public transport and application of the odd-even rule that was applied earlier in Delhi.

Discussion

In the present study it was observed that 46% and 54% participants perceived air pollution high and

moderate respectively (Table 1). It shows that study population is aware about air quality in the city of Pune.

As seen in table 2 according to participants major cause of air pollution is vehicular traffic in Pune city.

Similarly, as per the study conducted in China top three selected sources of air pollution were motor vehicles (78.5%), waste burning (56.3%) and industrial facilities (53.7%).⁹

94% of participants are aware that air pollution is responsible for various health hazards (Table 3). As observed in table 4 participants experience breathlessness as major symptom of air pollution hazard.

Pluhar et al. investigated Hungarian students' knowledge about health effect of air pollution; although many of the students didn't mention a specific disease as an environmentally induced one, the most mentioned diseases by students were infections and allergies.¹⁰

In another study, Iranian students chose respectively lung diseases, asthma and cardiac diseases more than other items in the questionnaire.¹¹

72 % of participants had no knowledge that air pollution can be measured as seen in table 5. Table 6 shows that 78% of participants don't know that air pollution measurement system and display of same is there in city of Pune.

The Central Pollution Control Board in India along with State Pollution Control Boards has been operating National Air Monitoring Program (NAMP) covering 240 cities of the country having more than 342 monitoring stations. (CPCB ref) In Pune city continuous air pollution monitoring systems that provide data on near real-time basis are also installed in some areas.¹²

In this study 76 % of participants take self-preventive measures in form of mask.

Many studies suggest that exposure to outdoor air pollution is responsible for various adverse health effects like respiratory effects and cardiovascular effects leading to rise in mortality. Hence,

it is good to take preventive measures like masks which most of the participants in study are following.

As per the present study, the most polluted area in Pune city is Swargate. Other areas were Pune station, Laxmi road, Katraj, Jedhe chowk, Highways, City area and Shivajinagar.

It was observed in this study that traffic policemen on an average work outdoors daily for 12 hours. This is considerably longer duration of exposure to the air pollution.

Also, study highlights that there is constant rise in the levels of air pollution over the years. This rise in air pollution may be due to rise in population and hence increase in vehicles and industries.

Traffic police in Pune are aware about use of mask to prevent air pollution. Also, few of them suggested plantation of trees, use of CNG vehicles, more use of public transport and application of the odd-even rule that was applied earlier in Delhi.

Conclusions

Traffic police of Pune city have good awareness regarding causes and levels of air pollution. Also, they know about health hazards due to air pollution and most of them take care in form of mask to avoid exposure to it. But they have got poor knowledge about air pollution monitoring system installed in city.

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Conflict of Interest: Nil

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