

## EFFECT OF AIR POLLUTION ON HUMAN HEALTH IN INDUSTRIAL AREAS - A CASE STUDY

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### ABSTRACT

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In the last few years, air pollution has become a major issue in some countries of Latin America and the Caribbean because of urban development and growing industrialization. In addition to industrial processes often concentrated in the cities, vehicle emission and stationary-source fuel combustion are the primary sources of air pollution. A survey was carried out at selected Industrial areas in and around Bangalore city to investigate the effect of air pollution human health. It was found that these personnel were directly exposed to the pollution for nearly 8 to 10 hours per day. It is observed that public is suffering from respiratory disorders and other problems due to exposure of air pollution.

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### INTRODUCTION

In many towns and cities exposure to air pollution is the main environmental threat to human health. Long time exposure to high level of toxic elements and small particulate matter in the air also contributes to wide range of chronic respiratory diseases, aggravates heart diseases and other types of particulates pollution, either on its own or in combination with SO<sub>2</sub>, leads to an enormous burden of ill health causing at least 500,000 premature death and 4 -5 million new case of chronic bronchitis each year (World Bank,1992).Due to increase of manmade activities, emission of particulate matters and gaseous matters have been rising over past decades, Expansion of industries and transport systems has made this situation more critical. Hence in this context an investigation has been undertaken to assess the

impact of air pollution on the health of human being at selected industrial areas.

### METRIALS AND METHODS

The present study was carried in Bommasandra and Jigani industrial areas during the period of Feb 2011 to May 2011. The study was conducted on human beings with an age group of 18 to 55 years. In each industrial area about 60 to 75 persons were selected for survey; they were employers of different industries, shop owners and others. Questionnaires was used to get details like

- i. Duration of work
- ii. Nature of work
- iii. Symptoms of illness
- iv. Experience during work and problems.

Table 1 shows further details.

#### Site Description

**Table 1.** Particulars in industrial areas

Particulars	Details
Total number of persons	50 to 70 no's
Average age	20 to 50 years
Sex	Male and female
Educational status	75%
Average exposure to pollution	10 hours per day
Residing period	1 to 20 years
Smokers	15%
History of family health disease.	None is suffering with any chronic

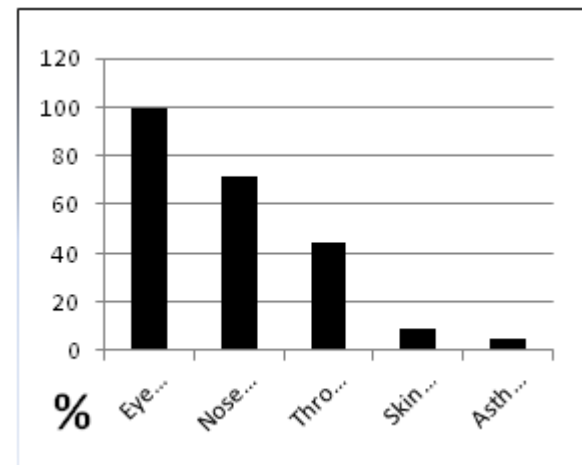
Bangalore the capital city of Karnataka occupies an important position not only in the state but also in the country. It is considered as one of the major industrial, commercial and educational centre in southern India and also as Information Technology and Bio Technology centre. The city has taken dubious distinction of being the fastest growing metropolis in the country. The Bangalore city corporation limits are enclosed within North latitude 12° 15' and 13° 31' and East longitude 77° 41' and 77° 59' at an average elevation of about 900 meters. Due to its climatic conditions and strategic locations the city has drawn in a large number of both private and public sectors industries.

#### RESULTS AND DISCUSSION

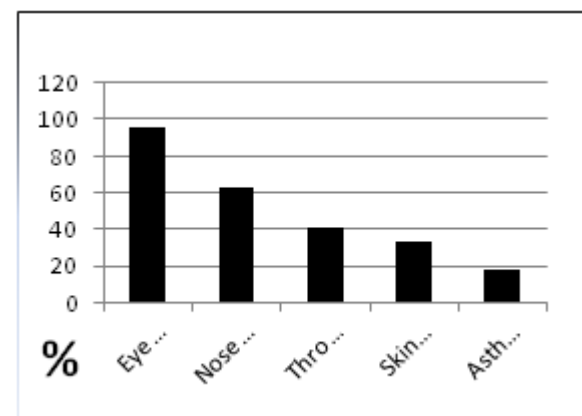
About 40 to 70 persons, with an average age of about 35 years, who are exposed air pollution for about 10 hrs per day, and with no family history of breathlessness, were selected for the study. The usual clinical symptoms due to air pollution are cough of about 60 to 70%, eye irritation of about 95 to 100%, throat irritation of about 40 to 45% and nose irritation of about 60 to 70%. The Table 2 shows the details of

**Table 2.** Clinical features when exposed to air pollution.

Particulars	Industrial area	
	Bommasandra	Jigani
Eye irritation	97.00%	95.70%
Nasal irritation	71.40%	63.04%
Throat irritation	44.40%	41.30%
Skin irritation	09.10%	33.00%



**Fig.1** Percentage affected on Health in Bommasandra Industrial area



**Fig. 2** Percentage affected on Health in Jigani Industrial area

features due to air pollutants.

Fig. 1 represents percentage of eye irritation was high in Bommasandra industrial area about 97%, which was major one due to emission of suspended particulate matter and gaseous particles like sulphur dioxide, nitrogen oxide and carbon monoxide from generator plants and industries. Similarly the fig 2 represents percentage of eye irritation was high in jigani industrial area about 95% due to emission of suspended particulate matter and gaseous particles like sulphur dioxide, nitrogen oxide and carbon monoxide from stone cutting and polishing industries. Similarly other effects of nose irritation about 63.04%, throat irritation about 41.3% due to emissions from industries and also from power generator units, vehicles.

#### CONCLUSION

It can be concluded that, the effects of Suspended Particulate Matter and gaseous matter impacts on human being, who are staying in that area for about 10 years, problems like, eye irritations, skin irritation, and respiratory problems are common. The employees of industries and others need periodic check up and they should be provided with preventive measures during work hours and awareness requires for public to take precautionary measures.

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