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SURVEY FOR DIFFERENT FACTORS CAUSING AIR POLLUTION

KAZMA FATMA
M.Phil., Roll No. 150014, Session: 2015-16
Department of Botany, B.R.A. Bihar University, Muzaffarpur, India
fatmakazma122gmail.com

ABSTRACT

The reason of this loss was not clear. This study, while a fantastic first step, does not capture the costs of treating illnesses caused by air pollution, which, if put in, might produce a total that is far greater than the estimate that is currently being utilised. An method that is rational and well-thought out is required in order to solve the complex issue of air pollution, which involves several facets and multiple industries. This strategy should take into account the most compelling epidemiological evidence that is currently available, conduct benefit-cost analyses of the various interventions that are being considered, and have a robust communications platform to ensure that a wide audience is aware of the negative effects that air pollution can have on health as well as the positive aspects that can be gained from its reduction. These contaminants have an adverse effect on human health, which in turn leads to a wide variety of disorders If significant measures are not taken to reduce exposures among the population, it is clearly clear that particle air pollution will continue to be one of the top causes of poor health in India. Studies on GBD are constantly being refined over the course of time, and it is anticipated that the specific numerical estimations will also evolve with time.

Keywords: epidemiological, interventions, air pollution,

INTRODUCTION

Air pollution is a major and more common risk factor for poor health in India, and it is a significant contributor to the sickness burden that the country endures. In addition, the prevalence of air pollution is growing. Exposure to air pollution is responsible for roughly 1.8 million premature deaths and 49 million disability adjusted life-years (DALYs) lost, as determined by the Global Burden of Disease comparative risk assessment for the year 2015. Because of this, it is considered one of the most major risk factors that contribute to poor health in India. It is safe to say that rapid urbanisation and industrial development have had a negative impact on urban air quality as a result of vehicular and industrial emissions as a result of the fact that rapid urbanisation and industrial development have had a negative impact on urban air quality as a result of the fact that rapid urbanisation and industrial development have had a negative impact on urban air quality as a result of the fact that rapid urbanisation and industrial development have had According to the WHO Urban Ambient Air Quality Database (2016)1, the top 20 cities in the world that have the highest annual average levels of PM2.5 are all situated in either the United States or China.

REPORT OF THE STEERING COMMITTEE ON AIR POLLUTION AND HEALTH RELATED ISSUES

Exposure to pollution in the air, in whatever form that pollution may take, has been recognised as a substantial risk factor for the development of adverse effects on one's health for a very long time. However, this understanding has not yet been translated into a coordinated response from several sectors of government that can lessen the burden of sickness in India that is linked to air pollution. Over 700 million people throughout the country are still exposed to smoke as a result of the usage of biomass cookstoves, and the World Health Organization reports that India is home to 13 of the top 20 cities in the world with the lowest quality of ambient air (WHO).

According to the conclusions of the research that was conducted for the Global Burden of Disease in the year 2010, it was established that air pollution was the most major environmental risk factor worldwide, as well as the most significant cause of death and disability in India. According to the findings of the comparative risk assessment exercise, approximately 1.6 million premature deaths and 59 million Disability-Adjusted Life Years

Khazna Fatma *, *University Department of Botany: B.R.A. Bihar University, Muzaffarpur. India*

(DALYs) are attributable, in India, to PM2.5 (fine particulate matter 2.5 m in diameter), along with other pollutants that are found in Household and Ambient Air Pollution. These numbers were determined by taking into account the total number of DALYs and years of life lost due to disability. Because PM2.5 particles have a diameter of less than 2.5 micrometres, they are referred to as "fine particulate matter" (HAP & AAP). HAP and AAP, when viewed as a whole, are responsible for 9% of the disease burden in the country and make up the single greatest risk factor out of the more than 60 risk variables that were investigated in the study. If significant measures are not taken to reduce exposures among the population, it is clearly clear that particle air pollution will continue to be one of the top causes of poor health in India. Studies on GBD are constantly being refined over the course of time, and it is anticipated that the specific numerical estimations will also evolve with time.

SCOPE AND PURPOSE OF THIS PUBLICATION

This article offers a broad introduction to the idea of air pollution health risk assessment (AP-HRA), as well as an evaluation of the health hazards posed by air pollution and the sources of that pollution. In addition, the general guidelines for carrying out an AP-HRA in the context of the aforementioned policy situations are given and explored (WHO Regional Office for Europe, 2014). Examples are provided that highlight various aspects of the topics that are discussed in relation to a variety of policy issues. As a consequence of this paper's development within the context of the UNECE Convention on Long-range Transboundary Air Pollution, the emphasis is primarily focused on the tools and references originating from Europe and North America. You may obtain further information from the report of a WHO expert meeting on AP-HRA, as well as from all of the background materials, which are both available online and can be accessed by you right now (Regional Office for Europe, 2014). This book is geared for policymakers at all levels, including local, national, and international, as well as other consumers of information on health risks from a wide range of industries, such as government agencies, research groups, and advocacy organisations.

SCOPE AND PURPOSE

Even at very low pollutant concentrations, there is a link between air pollutants and the risk of disease, including death from early causes. This association exists whether or not there is direct contact between the two. This is demonstrated by the fact that air pollution is an

Khazna Fatma *, *University Department of Botany: B.R.A. Bihar University, Muzaffarpur. India*

important component to consider when evaluating one's health as a whole. The inclusion of quantitative estimates of the health consequences produced by air pollution has become an increasingly essential component of policy choices. [Case in point:] [Case in point:] [Case in point: Recently, a number of significant pieces of research have attempted to quantify the illness burden that can be attributed to exposure to air pollution in a variety of populations and under a wide range of policy scenarios that operate on varying geographical and temporal dimensions. These studies have been conducted in an effort to determine whether or not exposure to air pollution causes illness and, if so, how much illness is caused by exposure to air pollution.

The purpose of the proposed workshop for industry professionals was therefore to accomplish two goals, which are as follows:

1. Provide an overview of the HRA methods and tools that are currently available for use indoors and outdoors.

2. Identify the general principles that should be followed in addition to the HRA methods and tools that should be used when conducting air pollution HRA for a variety of scenarios and purposes.

AIR POLLUTION

An air pollutant is any substance, whether it be solid, liquid, or gaseous (including noise), that is present in the atmosphere in such a quantity that it may or tends to be hazardous to humans, other living things, plants, property, or the environment in general. Air pollution can be produced by a wide variety of sources, including stationary sources like factories, power plants, and smelters as well as smaller sources like dry cleaners and degreasing operations; mobile sources like cars, buses, planes, trucks, and trains; anthropogenic activities as well as naturally occurring sources like windblown dust and volcanic eruptions; and anthropogenic activities as well as naturally occurring sources like sandstorms and volcanic erupting; and anthropogenic activities as well as naturally occurring sources The development that often takes place in countries at the same time that they undergo the process of industrialization has been a contributing factor in the worsening of air pollution. This includes the expansion of urban areas, an increase in the volume of vehicular traffic, rapid economic growth and industrialization, and higher overall levels of energy consumption.

Khazna Fatma *, *University Department of Botany: B.R.A. Bihar University, Muzaffarpur. India*

OBJECTIVE

1. To Study On The Survey For Different Factors Causing Air Pollution
2. To Study On The Steering Committee On Air Pollution And Health Related Issues

LITERATURE OF REVIEW

Venkatesh U. 2018. According to the findings of a study that was carried out by the WHO, thirteen of the twenty cities that are regarded as having the worst levels of pollution may be found on the territory of India. This accounts for more than half of the locations that are ranked as the most polluted everywhere on the whole planet. The location of Delhi comes in at position number eleven. The World Health Organization's allowable limit for levels of pollution in Delhi was exceeded by more than 30 times. Poisonous fog came across Delhi on November 8th, 2017, which prompted the Indian Medical Association (IMA) to declare a state of public health emergency owing to the condition.

Loes M.J. Geelen 2013. The major purpose of the current research was to make a comparison between the dangers that people in the Moerdijk region of The Netherlands perceive to be linked with the air pollution that is generated by industry and the air pollution that is caused by traffic. The identification of the demographic and psychometric characteristics that are connected with these perceived hazards was a secondary purpose of this study. In order to study the respondents' perceptions of risk, a questionnaire was sent out, and many different regression models were applied. The findings indicated that people's views of the hazards provided by air pollution created by industrial sources were greater than their perceptions of the dangers posed by air pollution caused by traffic. The risk that was seen to be caused by industrial air pollution was related with a variety of other issues in addition to automobile traffic. The psychometric factor known as affect performed exceptionally well when applied to the investigation of the business sector.

Thaddaeus Egondi 2013. Air pollution is one of the leading causes of death on a global scale, and it is also responsible for an increased risk of acquiring chronic diseases. The perspectives that people in the community hold regarding exposure are an essential component in determining how people will respond to relevant restrictions and whether or not they will accept them. Therefore, in order to adequately guide the formulation of suitable intervention

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techniques, it is vital to have a firm understanding of how individuals see things. This research was conducted with the goals of determining the levels of perceived pollution and the health hazards felt by occupants living in slums, as well as the connections between those two parameters and how they are related to one another. An examination of this sort was carried out on 5,317 residents of two of Nairobi's slums who were at least 35 years old. Both of these slums are located in Nairobi. In order to study the relationship that existed between the perceived score and individual characteristics, the linear regression approach was utilised. We were able to discover the geographical variance in the perceived levels by employing techniques such as hot spot analysis and ArcGIS.

Sukanya Das 2014. The research on the impact of air pollution on human health is the primary topic of this bibliographical study. It does so by drawing on articles from the medical literature as well as, more particularly, works in the field of economics. The survey comprises research that cover a wide range of national as well as international experiences from both countries and regions all over the world.

Mahendra Pratap Choudhary, Ph.D. 2013. Air pollution is the term used to describe the phenomena that occurs whenever gases, dust particles, fumes (or smoke), or odours are released into the atmosphere in such a way that it causes the atmosphere to become dangerous to the health of humans, animals, and plants. Because of the pollution in the air, not only the health of people but also the health of every other living creature on our planet is in peril. It contributes to the development of cancer and other respiratory problems, a weakening of the ozone layer atmosphere, a rise in the temperature of the planet, and the production of smog as well as acid rain.

Osama Rahil Shaltami 2020. Air pollution is a material that is formed when particles and gases mix to generate a new substance. This substance can exist in amounts that are harmful both outside and inside the home. It is possible that one of the effects of this will be an increase in the likelihood of being ill, in addition to an increase in temperature. To give a few examples, common pollutants include soot, smoke, mildew, pollen, methane, and carbon dioxide. These are only a few examples of the many that exist. It has been hypothesised that exposure to oxidative stress and inflammation in human cells, both of which are caused by air pollution, provide the foundation for the development of chronic disorders and cancer. Air pollution is connected to both of these processes.

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METHODOLOGY

India is one of the largest countries in the world that is still in the process of growing, and its economic growth over the past several decades has been one of the most robust in the annals of human history. A development of this kind results in a rise in the use of fossil fuels as well as the emissions produced by automobiles. These contaminants have an adverse effect on human health, which in turn leads to a wide variety of disorders (Allirani Thiyagarajan 2003). Ozone, carbon monoxide, particulate matter, sulphur dioxide (SO2), nitrogen oxides (NOx), suspended particulate matter (SPM), particulate matter (PM10), and carbon monoxide (CO) are the most significant air pollutants that can have an impact on human health (O3). The Central Pollution Control Board in New Delhi has established criteria for the quality of the air in ambient environments for each of these types of air pollutants.

DATA ANALYSIS

In chapter 3, the data on air pollution collected from TNPCB have been examined through the process of generating the Air Quality Index (AQI). The AQI, or Air Quality Index, is a detailed measurement of air quality that the average person is unlikely to understand. In addition, the true causes of air pollution as well as the amount of their contributions are not well understood. Research is required to be done on both the effects that air pollution has on people's overall health and the solutions that have been developed to combat the problems that are caused by air pollution. Previous researchers have not conducted this kind of study, particularly in the metropolis of Chennai.

The following research approach was utilised in order to investigate people's perspectives on the relationship between air pollution and the state of human health. The following four places served as the focal points of the study, and the air quality at each of them was evaluated using the AQI scale (Chapter3).

1. Anna Nagar; and
2. Kilpauk;
3. T. Nagar; and
4. Adyar.

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A selection of three target groups—vendors, auto-drivers, and traffic-police officers—is made, and the strategies that are employed are as follows:

- Design of questionnaire;
- Data collection by direct interview;
- Data analysis using SPSS and ANOVA.

DEVELOPMENT OF QUESTIONNAIRE

People who were exposed to air pollution were asked their thoughts on a preliminary questionnaire (Appendix 2) that was meant to explore their perceptions on the effects of air pollution and other elements of the issue. There were three groups of persons that were taken into consideration at each location: peddlers, motorists, and pedestrians. Direct interviews were conducted with each of the 91 respondents to get their replies. The preliminary investigation carried out with SPSS revealed that the questionnaire was deficient since it did not cover all of the relevant topics. In light of this, the preliminary questionnaire was modified after it was discussed with a number of seasoned professionals. The questionnaire with the changes is included in Appendix 3.

DATA COLLECTION

The updated questionnaire was utilised in direct interviews in order to acquire the necessary data. It was important to take into account both the slow times and the busiest times of the day in terms of traffic. When selecting the individuals, we took into account both their availability at that particular moment in time as well as their desire to participate in the study. The four neighbourhoods of Anna Nagar, Kilpauk, T.Nagar, and Adyar, each of which had their ambient air quality evaluated, are taken into consideration for this study as well. The information was gathered at the significant road intersections, because these were the locations with the highest traffic densities and the greatest number of pavement vendors. On each route, a distance of around 500 metres was travelled. Participation from college students was required to acquire this statistics.

Table 4. 1 Number of responses obtained in each survey location

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Location	Frequency	Percent	Valid percent	Cumulative percent
Anna Nagar	126	24.6	24.6	24.6
Kilpauk	127	24.8	24.8	49.3
T Nagar	129	25.1	25.1	74.5
Adyar	131	25.5	25.5	100.0
Total	513	100.0	100.0	

Table 4. 2 Gender of the respondents

Gender	Frequency	Percent	Valid percent	Cumulative percent
Male	472	92.0	92.0	92.0
Female	41	8.0	8.0	100.0
Total	513	100.0	100.0	

Table 4. 3Age of the respondents

Age	Frequency	Percent	Valid percent	Cumulative percent
£ 30	98	19.1	19.1	19.1
>30 and £ 40	241	47.0	47.0	66.1
>40 and £ 50	129	25.1	25.1	91.2

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>50	45	8.8	8.8	100.0
Total	513	100.0	100.0	

Table 4. 4 Occupation of the respondents

Occupation	**Frequency**	**Percent**	**Valid percent**	**Cumulative percent**
Vendor	222	43.3	43.3	43.3
Driver	235	45.8	45.8	89.1
Traffic police	56	10.9	10.9	100.0
Total	513	100.0	100.0	

Table 4. 5 Work environment of respondents

Work environment	**Frequency**	**Percent**	**Valid percent**	**Cumulative percent**
Open	452	88.1	88.1	88.1
Close	61	11.9	11.9	100.0
Total	513	100.0	100.0	

DATA ANALYSIS

SPSS was used to conduct an analysis on the responses received from 513 respondents. Appendix 4 contains the statistical information that was gathered from the various questions in the questionnaire. The information on the rating frequencies for the various enquiries may be found in Appendix3. About 11% of those who responded worked in law enforcement, 43% were business owners, and the remaining 46% were those who drove cars. The

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percentage of female responders was only 8%, and every single one of them worked in sales. In addition, around 12% of respondents came from a closed environment. Approximately 78% of the total respondents reported having the symptoms of illness as a result of being exposed to air pollution. Table 4.6 contains the descriptive statistics that were gathered from the items that were examined. The indicated averages are the average weighted scores based on a scale ranging from 1 to 5.

Table 4. 6 Descriptive statistics

Item description	**Mean**	**Standard deviation**
1. Sources of emission contributing to airpollution		
Vehicle emissionDust		
Field burning	3.59	1.284
Construction activitiesIndustry	3.10	1.275
	3.20	1.248
	2.90	1.268
	2.76	1.319
2. Factors affecting air pollution level due to Seasonality	3.03	1.151
Festivals	4.23	1.153
Time of the dayTraffic	2.98	1.204
	3.66	1.193

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3. Effect of pollution on human well-beingHealth		
Work	2.84	1.253
Sleep	2.64	1.264
	2.58	1.218
4. Extent of exposure to pollution	2.55	1.238
5. Decrease in air pollution due to introduction of new transport systems		
Mass rapid transport system (MRTS)Metro rail	3.28	1.621
Bus rapid transport system (BRTS)	3.51	1.708
	3.07	1.782

The perceptual data obtained from the respondents were analysed using the three approaches that are detailed below.

1. ANOVA and pair-wise comparison by Tukey's test.
2. Test of difference in two means
3. Chi-square test.

Sources of Contribution to Air Pollution

In order to discover the factors from the following that contribute to air pollution, an analysis of variance (ANOVA) and Tukey's test were used.

1. Vehicle emissions (A)
2. Dust (B)
3. Field burning (C)

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4. Construction (D)

5. Industry (E).

The weighted scores for the different questions included in Appendix 5 were calculated based on the SPSS output of frequency (Appendix 5), which was used in conjunction with the ratings that were provided by the respondents (1-very low, 2-low, 3-moderate, 4-high, and 5-very high). The table 4.7 provides a weighted score for each of the several sources that contribute to air pollution.

CONCLUSIONS

Massive amounts of unwelcome pollutants, which have a negative impact on both human health and the environment, are prevalent in the air due to the rapid industrialization and huge growth in the number of cars inside the city. In the course of this research, the quality of the air in the surrounding environment was evaluated in four distinct regions of the metropolitan metropolis of Chennai. When doing this research, it is important to take into account the daily average concentrations of the most significant pollutants, namely sulphur dioxide (SO2), nitrogen oxides (NOx), suspended particulate matter (SPM), and particulate matter (PM10), during the years 2007 to 2013. The indicators of air quality were calculated with the help of the IND-AQI technique. The analysis of variance was utilised in order to examine the data for the air quality index. It was discovered that the air quality was assessed as excellent in one location, while it was categorised as moderate in the other three locations. It was discovered that SPM was the primary agent responsible for the contamination of the air. During the course of the research, it was found that the concentration levels of the contaminants showed a discernible trend toward upward movement. According to the findings of the study, the air quality in the metropolitan area of Chennai in India is significantly higher than that of other major cities in India.

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Khazna Fatma *, *University Department of Botany: B.R.A. Bihar University, Muzaffarpur. India*