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32. IMPACT OF AIR POLLUTION AMONG LABOURS IN CHIDAMBARAM BLOCK

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ABSTRACT

Air pollution stems gases and air borne particles which, in excess, are harmful to human health, buildings and ecosystems. Air pollution in developing countries is derived not only from stack emission of pollutants from relatively large industries, where inadequate pollution control measures exist and pollutants are allowed to escape to atmosphere. The kind of air pollution emitted vary from industry vary from industry to another, the concentrations of different pollutants in the atmosphere also vary widely from process to process, and from place to place with different geographic and climatic conditions.. In general, the workplace exposure levels are much higher than that the general population, because the emissions are rapidly diluted and dispersed by the wind. But the exposure duration of the general population is much longer than that of workers. Air pollution is the presence of substances in air in sufficient concentration and for sufficient time, so as to be, or threaten to be injurious to human, plant or animal life, or to property, or which reasonably interferes with the comfortable enjoyment of life and property. Air pollutants arise from both manmade and natural processes. Air pollutants arise from both manmade and natural processes. Air pollution has been considered as the one of types of pollution which causes different disease in various labourers in Chidambaram Block and this leads to increase the expenditure of sample respondents on their health care. In this context the researcher taken this title.

INTRODUCTION

The term "air pollution" is used to describe substances that are artificially introduced into the air. Air pollution stems gases and air borne particles which, in excess, are harmful to human health, buildings and ecosystems. Air pollution in developing countries is derived not only from stack emission of pollutants from relatively large industries, like iron and steel, non-ferrous metals and petroleum products industries, but also from fugitive emission of pollutants from small scale factories, such as cement mills, lead refineries, chemical fertilizer and pesticide factories and so on, where inadequate pollution control measures exist and pollutants are allowed to escape to atmosphere. Since industrial activities always involve energy generation, the combustion of fuels is a main source of air pollution in developing countries,

where coal is widely used not only for industrial, but also for domestic consumption. For instance in china, more than 70 per cent of total energy consumption relies on direct coal combustion, from which large amounts of pollutants (Suspended particulates, Sulphur dioxide, etc) are emitted under incomplete combustion and inadequate emission controls.

STATEMENT OF THE PROBLEM

The kind of air pollution emitted vary from industry vary from industry to another, the concentrations of different pollutants in the atmosphere also vary widely from process to process, and from place to place with different geographic and climatic conditions. It is difficult to estimate specific exposure levels of various pollutants from different industries to the general population in developing countries, as elsewhere. In general, the workplace exposure levels are much higher than that the general population, because the emissions are rapidly diluted and dispersed by the wind. But the exposure duration of the general population is much longer than that of workers.

AIR POLLUTION AND HUMAN HEALTH

Air pollution occurs when suspending particular matter and noxious gases occur in the the air .Smoke, ash and dust are major constituents of (Spm) sulphur and nitrogen based compound (SO₂,NO₂) and carbon monoxide, carbon dioxide is the main constituent of noxious fumes in the air. Among industrial activities thermal power stations top list of air polluters due to the high amount of discharge of smokes and ash .Chemical and fertilizer plants are also responsible for letting noxious substances in air during production.

Air pollution in India is serious issue with major sources being fuel wood and biomass burning, fuel adulteration, vehicle emissions and traffic congestion.

NEED FOR THE STUDY

Air pollution is the presence of substances in air in sufficient concentration and for sufficient time, so as to be, or threaten to be injurious to human, plant or animal life, or to property, or which reasonably interferes with the comfortable enjoyment of life and property. Air pollutants arise from both manmade and natural processes. Air pollutants arise from both manmade and natural processes. Pollutants are also defined as primary pollutants resulting from combustion of fuels and industrial operations and secondary pollutants, those

which are produced due to reaction of primary pollutants in the atmosphere. The ambient air quality may be defined by the concentration of a set of pollutants which may be present in the ambient air we breathe in. These pollutants may be called criteria pollutants. Emission standards express the allowable concentrations of a contaminant at the point of discharge before any mixing with the surrounding air.

SOURCE OF AIR POLLUTION

Air pollution enter into the atmosphere by various natural and man-made activities Such as dust storm, volcanic eruptions, industrial pollution etc. They may be present in any form viz. solid, liquid and gas. Based on the mode of generation of pollutants, the sources are classified as (i) Natural sources pollution are forest fires, volcanic eruptions, dust storms and pollen grains (ii) Man-made sources are domestic, industrial, vehicular pollutions.

Based on the origin of pollutants are classified as (i) Primary pollutants, and (ii) Secondary pollutants. Tthe chemical composition of pollutants. They are classified as (i) Organic and (ii) Inorganic pollutants.

EFFECTS OF AIR POLLUTION ON HUMAN BEINGS

Air pollution has many effects on health of persons of all categories particles including nitrates, sulphates, carbon and acid aerosols are complex group of pollutions. Airborne particles vary in size and composition depending on time and location. Adults exposed to low levels of pollution will experience symptoms such as coughing, soreness in their chests, sore throats and sometimes headaches.

Effects of Air Pollution on Plants

The response of plants to air pollutants is variable and depends on the individual genotype, age, stage of growth, proximity and concentration of pollutants and duration of them on the slaught. It affects the opening of stomata photosynthesis, water relations, respiration and enzyme system.

EFFECTS OF AIR POLLUTION ON ANIMALS

The effects of air pollution on domestic animals are similar to those observed in humans. Chronic poisoning results from the ingestion of forage contaminated with atmosphere pollutants. Among the metallic contaminants, arsenic, lead and molybdenum are important. When the forage crops contaminated by fluoride containing materials are eaten continuously in live stocks symptoms of fluorosis appear.

EFFECTS OF AIR POLLUTION ON MATERIALS

Air pollution also causes damage to property and materials. The pollutants most destructive to materials are smoke, girt, and dust and Oxide

of sulphur; oxide of sulphur causes erosion of building materials such as limestone, marble, mortar and deterioration of statues. Nitrous and Nitric acids formed by the activity of Nitrogen oxides. Precipitate down in the form of acid rains or may remain i the atmosphere in clouds and fogs. Acid rains have an erosive action on metal surfaces and caused fading of textiles and deterioration of fabrics. It also corrodes building, monuments, bridges, railings, etc. H₂S decolorizes silver and lead paints. Ozone damages textiles discolours dyes and accelerates dyes as whereas rubber cracking

AIR POLLUTION PREVENTION

Solution efforts on pollution are always a big problem. This is why prevention interventions are always a better way of controlling air pollution. These prevention methods can be either come from government (laws) or by individual actions.

Government actions

→ Governments throughout the world have already taken action against air pollution by introducing green energy. Some government are investing in wind energy and solar energy, as well as other renewable energy, to minimise burning of fossil fuels which cause heavy air pollution

→ Governments also are forcing companies to be more responsible with their manufacturing activities, so that even though they still cause pollution, they are a lot controlled.

→ Companies also building more energy efficient cars which pollute less than before.

Individual Actions

→ Encourage your family to use the bus, train or bike when commuting. If we all do this, they will be fewer cars on road and less fumes.

→ Use energy (light, water, boiler, kettle and fire woods) wisely. This is because lots of fossil fuels are burned to generate electricity, and so if we can cut down the use; we will also cut down the amount of pollution we create.

→ Recycle and re-use things. This will minimise the dependence of producing new things. Remember manufacturing industries create a lot of pollution, so if we can re-use things like shopping plastic bags clothing, paper and bottles it can help.

OBJECTIVES OF THE STUDY

- 1.To study the expenditure pattern of Labourers on their health care due to air pollution
- 2.To examine the impact of air pollution of the study population.
- 3.To study the awareness of labours to control on air pollution
- 4.To suggest some policy measures to control air pollution in the labours.

RESEARCH METHODOLOGY

The present study is carried out in Chidambaram Town. The study uses the primary data collection

from various labourers (120) such as street vendors, scavengers, stall worker, are selected and stratified random sample method were adopted to identify the sample population. A well structured questionnaire is used to collect the primary data relating to impact of air pollution on human health.

TECHNIQUES

The researcher has used the following techniques in his study:

- Documentation, Questionnaires, Interviews, Sampling

Table- 1

Classification of the Sample Respondents Affecting Air Pollution

| Diseases affected by the Air Pollution | T o t a l (n=120) | Percentage |
|--|-------------------|------------|
| Cold | 58 | 48.3 |
| Respiratory problem | 40 | 33.3 |
| Bronchitis | 36 | 30.0 |
| Asthma | 60 | 50.0 |
| Emphysema | 72 | 60.0 |
| Skin disease | 83 | 69.2 |
| Lung or throat cancer | 48 | 40.0 |
| Cold and skin | 73 | 60.8 |

Source: computed from the primary data

Table – 1 shows that the classification of respondents affected by disease due to air pollution: Out of 120 respondents highly affected by the skin disease (69.2%), followed by cold and skin (60.8%), emphysema (60.0%) whereas other diseases affected between 36 per cent to 60 per cent for bronchitis, respiratory problem, lung or throat cancer, cold, and asthma respectively.

Table – 2 shows Monthly average expenditure on health care of respondents. The expenditure on Physician the Means Rs. 157, the maximum is Rs. 500 and the minimum is 0, this is on the side of male whereas on the female side the mean is Rs 302, the maximum is Rs. 1500 and the minimum is 0. The expenditure on Medicine, the mean is Rs. 397, the maximum is Rs. 3000 and the minimum is 0 on the side of male and on the side of female the mean is Rs. 408, the maximum is Rs. 1000 and the minimum is 0. The expenditure of respondents on Travel, the mean is Rs.547, the maximum is Rs. 4000 and the minimum is 0, this is on the side of male and on the side of female the mean is Rs. 413, the maximum is Rs. 2000 and The minimum is 0.

Table -2 Cost of Health Care

| Cost of Health Care | Male | Female |
|---------------------|------|--------|
| Physician | | |
| Maximum | 500 | 1500 |
| Mean | 157 | 302 |
| Medicine | | |
| Maximum | 2000 | 1000 |
| Mean | 397 | 408 |
| Minimum | 0 | 100 |
| Diagnostic | | |
| Maximum | 3000 | 500 |
| Mean | 232 | 94 |
| Travel | | |
| Maximum | 4000 | 2000 |
| Mean | 547 | 413 |

Source: Computed from the primary data

Table-3 Knowledge about Air Pollution-wise Classification of the Sample Respondents

| Knowledge about Air Pollution | Gender | | Total | % |
|-------------------------------|--------|--------|-------|-------|
| | Male | Female | | |
| Much high | 24 | 16 | 40 | 33.3 |
| Somewhat high | 18 | 12 | 30 | 25.0 |
| Somewhat less | 23 | 27 | 32 | 26.7 |
| Much less | - | - | - | 0.0 |
| Total | 65 | 55 | 120 | 100.0 |

Source: computed from the primary data

The above Table – 3 shows that 33.3 per cent respondents their knowledge is very high, 25.0 per cent Respondents their knowledge is somewhat high, 26.7 per cent Respondents the knowledge is somewhat less.

The above Table – 4 shows how the respondents gave the ranking on the source of air pollution. Out of 60 male 48 respondents and out of 60 female 45 respondents give the first rank for the sources of pollution is natural impact followed by second rank is tobacco smoking, third rank is motor vehicles, fourth rank is source of incomplete combustion of coal and wood and finally give the fifth rank is occurrence ash and dust in the study area.

Table- 4
Sources of Air Pollution-wise Ranking from the Sample Respondents

| Source of Air Pollution | Male | | | | | Total | Female | | | | | Total |
|--|-------|----|----|----|----|-------|--------|----|----|----|----|-------|
| | Ranks | | | | | | Ranks | | | | | |
| | 1 | 2 | 3 | 4 | 5 | | 1 | 2 | 3 | 4 | 5 | |
| M o t o r vehicles | 0 | 10 | 12 | 22 | 16 | 60 | 0 | 16 | 10 | 24 | 10 | 60 |
| Occurrence ash and dust | 6 | 16 | 12 | 16 | 10 | 60 | 0 | 20 | 17 | 14 | 9 | 60 |
| N a t u r a l Impact | 48 | 8 | 4 | 0 | 0 | 60 | 45 | 9 | 3 | 3 | 0 | 60 |
| Source of incomplete combustion of coal and wood | 6 | 12 | 20 | 16 | 6 | 60 | 9 | 7 | 18 | 10 | 16 | 60 |
| T o b a c c o smoking | 0 | 14 | 12 | 6 | 28 | 60 | 6 | 8 | 12 | 9 | 25 | 60 |

Source: computed from the primary data

CONCLUSION

Air pollution has been considered as the one of types of pollution which causes different disease in various labourers in Chidambaram Block and this leads to increase the expenditure of sample respondents on their health care. As shown by the study the most source of air pollution is motor vehicles and the most of them are affected by skin diseases in the study area.

Suggestions

- The Municipality should increase the health facilities to the labourers in order to take care of them.
- The state government should advise the company holders to pollute less through the awareness programmes and issue the materials..
- The Local authorities should make the control of old vehicle because those vehicles are more contributed to air pollution.
- The government should encourage people to use solar energy in their electronics goods.
- The government should increase the number of project against air pollution.

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