



## **Exploring the major problems faced by the respondents due to industrial pollution revealed with henry garrett ranking technique**

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### **ABSTRACT:**

Systematic assessment of the effect of industrial pollution on the health and survival of residents certainly goes a long way in monitoring the pollutants and bringing out meditative measures by the authorities. The present study was taken up with the objective of assessing the impact of industrial pollution on the growth and Human Health, data reveals a higher prevalence of respiratory, eye and skin problems in the industrial areas, as compared to those living in non-industrial areas. Long-term health studies are suggested for proper management of environment and health in these areas by the governmental authorities and the society at large.

### **I.INTRODUCTION**

Control of pollution is important for its damaging effects on human health and social welfare. Assessing health damage caused by pollution is important as it provides an impetus for pollution control as well as a means for evaluating the benefits of specific pollution control policy. Human health is very closely linked to environmental quality, as the Etiology of most of the human diseases being related to the status of the living environment of man. According to statistics, 25% of all preventable illnesses are caused by detrimental environmental factors (UNEP, United Nations Children's Fund, WHO, 2002). Owing to the lack of monitoring, it is difficult to define exactly the environmental pollution caused by industrial activities. Industries turn out wastes which are peculiar in terms of type, volume and frequency

depending on the type of industry and population that uses the product. The pollution potential of industrial waste is far greater than that of domestic waste. Contaminated air, soil, and water by industrial effluents are associated with disease burden (WHO, 2002) and this could be the reason for the current shorter life expectancy in developing countries (WHO, 2003) when compared with developed nations. Pollutants affect human health in several ways. These include direct irritation of target organs or metabolic changes within cells.

The basic objective of this study was to identify the common health problems with status and level of typical population (target group), which are residing near industrial areas (sugar mill, paper mill and thermal power plant) in Yamuna Nagar Haryana. Yamuna Nagar is the second big industrial city of

Haryana. Population explosion, uncontrolled urbanization and industrialization caused a high rate of waste generation in Yamuna Nagar. There are many industries like paper mill, sugar mill, distillery, cement, metal industries, ply wood etc. The problem of pollution is severe due to paper mill, sugar mill and thermal power plant Sharma and Chaudhry, 2013). The results of the present study are based on the information obtained by taking help of questionnaire, focus group discussion and observation, from three different areas i.e. around sugar mill, paper mill and thermal power plant.

### 1. REVIEW OF LITERATURE

Pandey (2006) in his study "Water pollution and health" pointed out that water is the important constituent of life support system. No one can like and even dream to live without water. Most of our water bodies have become polluted due to industrial growth; Urbanization and manmade problems are mainly the result of population growth. Poor sanitation and contaminated drinking water arising from human activity and natural phenomena create serious problems in human health. The chief sources of water pollution are sewage and other waste, industrial effluents, agricultural discharges and industrial wastes from chemical industries, fossil fuel plants and nuclear power plants. They create a large problem of water pollution rendering water no longer fit for drinking, agriculture and as well as for aquatic life. More than 2.6 billion people of the world's population lack basic sanitation facilities and over one billion people still use unsafe drinking water sources. As a result thousands of children die every day from diarrhea and other water, sanitation and hygiene related diseases and many suffer and are weakened by illness

H. Janaka de Silva et al., (2002) conducted a cross-sectional comparative prevalence study to evaluate the effect of air pollution on individuals

who lived in an industrial zone in Sri Lanka. Moreover, they compare the individuals who are living in non-industrial zone. The authors used a pretest questionnaire. In their research, they concluded that children in the industrial area were 2.3 times more likely to have respiratory infections like coughing and asthma and the adult population was 2.1 times more likely to have these respiratory infections such as asthma and lung cancer than the people who are living in non-industrial zone.

E.E. Nkwocha & R.O. Egejuru (2004) calculated the effects of industrial air pollution on the respiratory health of children in Nigeria. 250 children were sampled from six primary schools for the period of 18 months. Subjects were divided into two zones A & B. Monitored and examined on weekly basis. The effect of four criteria pollutants (Nitrogen dioxide, Sulfur dioxide, particulate matter and carbon monoxide) on the respiratory health of children and diseases were also examined such as cough, cold, bronchitis, asthma and lung cancer. Data was obtained from survey method. Results showed that there was a strong association between industrial air pollution and symptoms of diseases among children. The effect was strongest among children below two years of age in the high polluted than in the less polluted area.

The most recent study conducted by Pakistan EPA and the World Bank (2006) on "the impact of industrial air pollution on human health" resulted that it causes 22,000 premature deaths in adults and 700 in children annually. In terms of annual Disability Adjusted Life Years lost, mortality accounted for an estimated 60 percent followed by respiratory symptoms.

### II. OBJECTIVE OF THE STUDY

To identify the problems faced by the respondents due to industrial pollution in Perundurai, Erode district.

**2. STATEMENT OF THE PROBLEM**

The heavy usage of chemicals and the waste effluents from the perundurai industries are not properly treated through water effluent treatment .Establishing the water effluent treatment required huge investments in crore’s, hence the small and medium entrepreneurs in perundurai units are unable to launching and they have directly linked the waste disposal in the land. Due to these toxic elements in the waste disposal the entire ground water as well as runderground water where polluted acutely.

**III.RESEARCH METHODOLOGY**

**3.1 Sampling Design**

Convenient sampling method has been used for the study. The sample size has been 220 policy holders which have been selected in Perundurai, Erode district and data is collected for solving particular problem through well structured questionnaire.

**3.2 Henry Garret Ranking Technique**

Garrett’s ranking technique was adopted to analyse the views of the employees. The order of merit thus given by the employees for each statement under each head was converted into ranks by using the following formula.

$$\text{Per cent Position} = \frac{100 (R_{ij} - 0.50)}{N_j}$$

Where

R<sub>ij</sub> = Rank given for the ith statement by jth respondent

N<sub>j</sub> = Number of statements ranked by jth respondent

The per cent position of each rank thus obtained was converted into scores by referring to the table given by Garrett. Then for each statement, the scores of individual respondent were added together and divided by the total number of despondence. The mean scores for all the statements were arranged in an ascending order, ranks were assigned and the important statements identified.

s.no	Problems	Mean score	Total score	rank
1	Respiratory diseases	670	2010	III
2	Skin related problem	533	2132	II
3	Cancer	430	2150	I
4	Infertility and disability	804	1608	IV
5	Digestive problems	863	863	V

**Table No - 1**  
**PROBLEMS FACED BY THE RESPONDENTS DUE TO INDUSTRIAL POLLUTION**

**INTERPRETATION**

It is interpreted from the above table that complaint in cancer is ranked as a number one problem with a total score of 2150 points. Complaint in Skin related problem and Respiratory diseases is ranked as a number two and three problem with a total score of 2132 and 2010 points. Complaint in Infertility and disability and Digestive problems is ranked as a number four and five problem with a total score of 1608 and 863 points.

## FINDINGS

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## SUGGESTIONS

- 1) Although there are no comprehensive data on waste generation rates, collection coverage, storage, transport, and disposal volumes and practices, the Central Public Health and Environmental Engineering Organization (CPHEEO) estimated a per capita waste generation in Indian cities and towns in the range of 0.2 to 0.6 kilograms per day.
- 2) To prevent future problems, India must take immediate steps to control waste generation, to enhance recycling recovery and reuse, and to ensure better collection and sustainable disposal.

## CONCLUSION

Results revealed that the three different areas had different health and environmental problems. As general respiratory problems were found to be more prevalent in paper mill zone; and asthma and fever were found to be in higher extent in thermal power plant and sugar mill zone respectively. Air pollution problems were found to be more in thermal power plant however; water problems were more prevalent in sugar and paper mill zones. The present study is

expected to reveal the status of pollution-associated health problems but also form a baseline data for further detailed investigation on health impact assessment. This study will also be helpful for extrapolation of the scenario and for formulation of mitigation strategies.

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