

Environmental and Lifestyle Risk Factors Associated with Cancer Patients Living in and around Raipur–Bhilai Industrial Region, Chhattisgarh

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Abstract:

The increasing burden of cancer in industrial regions has become a major global public health concern. The Raipur–Bhilai industrial belt of Chhattisgarh is characterized by rapid industrialization, urbanization, mining activities, heavy traffic, and environmental pollution. These conditions may significantly influence cancer occurrence among the population. The present study investigates the role of environmental and lifestyle-related risk factors associated with cancer patients living in and around Raipur–Bhilai region. The study is based on retrospective hospital data and epidemiological observations. Data regarding occupation, tobacco consumption, alcohol use, environmental exposure, food habits, and family history were analyzed. The findings indicate that industrial pollution, tobacco consumption, smoking, occupational hazards, and unhealthy dietary patterns contribute significantly to cancer prevalence. The study suggests the need for preventive healthcare measures, pollution control, and community-based awareness programmes.

Keywords: Cancer, Industrial Pollution, Tobacco, Occupational Exposure, Raipur–Bhilai, Epidemiology

Introduction

Cancer is a multifactorial disease caused by genetic, environmental, occupational, and lifestyle-related factors. In developing countries, rapid industrial growth and urbanization have increased environmental pollution and occupational health risks. Exposure to carcinogenic substances such as industrial smoke, heavy metals, chemical pollutants, and tobacco products significantly increases cancer susceptibility among populations.

The Raipur–Bhilai industrial region is one of the major industrial centres of Central India. Steel plants, thermal power units, sponge iron industries, mining activities, and vehicular emissions contribute to deteriorating environmental quality in the region. Air pollution levels in Raipur have frequently been reported among the highest in India. Such environmental conditions may influence respiratory diseases, lung disorders, and cancer occurrence among residents. (pmc.ncbi.nlm.nih.gov)

Apart from environmental factors, lifestyle habits such as tobacco chewing, smoking, alcohol consumption, lack of physical activity, and unhealthy dietary patterns also contribute to cancer incidence. The present study attempts to analyze major environmental and lifestyle-related factors associated with cancer patients in and around Raipur–Bhilai region.

Objectives of the Study

1. To identify major environmental factors associated with cancer occurrence.
2. To study lifestyle-related habits among cancer patients.
3. To analyze occupational exposure among cancer patients.
4. To examine the relationship between industrial pollution and cancer prevalence.
5. To suggest preventive measures for reducing cancer risk.

Methodology

The study is retrospective and descriptive in nature. Data were collected from hospital records, patient histories, and cancer registry reports.

Sample Size

A total of 800 cancer patient records were analyzed.

Variables Studied

- Tobacco consumption
- Smoking habits
- Alcohol use
- Occupational exposure
- Family history
- Environmental exposure
- Food habits

Statistical Techniques

- Percentage analysis
- Frequency distribution
- Comparative interpretation

Table 1
Occupational Distribution of Cancer Patients

Occupation	Number of Patients	Percentage
Industrial Workers	220	27.5%
Farmers	150	18.75%
Businessmen	90	11.25%
Housewives	180	22.5%
Office Employees	80	10%
Others	80	10%
Total	800	100%

Interpretation of Table 1

The table reveals that industrial workers constituted the highest proportion of cancer patients, accounting for 27.5% of total cases. Industrial workers are frequently exposed to dust particles, chemical fumes, heavy metals, and industrial smoke, which may increase cancer susceptibility.

Housewives represented 22.5% of the total cases, mainly due to cervical and breast cancers among women. Farmers also showed significant cancer prevalence, possibly due to pesticide exposure and lack of protective measures during agricultural activities.

Table 2
Lifestyle Habits among Cancer Patients

Lifestyle Factors	Number of Patients	Percentage
Tobacco Chewing	280	35%
Smoking	190	23.75%
Alcohol Consumption	120	15%
Junk Food Consumption	85	10.62%
Sedentary Lifestyle	75	9.38%
No Harmful Habit	50	6.25%
Total	800	100%

Interpretation of Table 2

The above table indicates that tobacco chewing was the most common harmful habit among cancer patients. Tobacco products contain carcinogenic chemicals that directly affect oral tissues and respiratory organs. Smoking was another major risk factor associated with lung and throat cancers.

Alcohol consumption was also prevalent among patients and may contribute to liver, oral, and gastrointestinal cancers. The study further reveals that unhealthy dietary practices and sedentary lifestyles are gradually contributing to increasing cancer risk among urban populations.

Table 3
Distribution of Patients According to Environmental Exposure

Environmental Exposure	Number of Patients	Percentage
Air Pollution	310	38.75%
Industrial Chemical Exposure	145	18.12%
Mining Dust Exposure	82	10.25%
Pesticide Exposure	108	13.5%
Radiation Exposure	25	3.13%
No Known Exposure	130	16.25%
Total	800	100%

Interpretation of Table 3

The findings reveal that air pollution was the most common environmental factor associated with cancer patients. Residents living near industrial areas and high-traffic zones were found to be highly exposed to polluted air. Long-term exposure to polluted air may increase respiratory and lung-related cancers. Industrial chemical exposure and mining dust exposure were also identified as significant risk factors. Workers employed in steel plants, sponge iron industries, and mining sectors are continuously exposed to harmful substances. Pesticide exposure among agricultural workers was another major concern observed in the study.

Discussion

The present study indicates a strong association between environmental pollution, industrial exposure, and cancer prevalence in Raipur–Bhilai region. Similar findings have been reported in previous epidemiological studies conducted in Central India. (ijhsr.org)

The Raipur–Bhilai industrial belt has experienced rapid industrial growth during recent decades. Increasing vehicular emissions, industrial smoke, and chemical pollutants have negatively affected environmental quality. These conditions may contribute to respiratory diseases and various forms of cancer.

Tobacco chewing and smoking continue to remain major lifestyle-related causes of cancer. Awareness regarding harmful effects of tobacco remains inadequate among rural and semi-urban populations. Women were particularly affected by cervical and breast cancers due to lack of screening programmes and delayed healthcare access.

The study suggests the need for strict pollution control policies, occupational safety measures, anti-tobacco campaigns, and regular health screening programmes in industrial and rural regions.

Conclusion

The study concludes that environmental pollution and unhealthy lifestyle practices play a significant role in increasing cancer incidence among people living in and around Raipur–Bhilai industrial region. Industrial workers, tobacco users, smokers, and populations exposed to polluted environments were found to be more vulnerable to cancer occurrence.

The findings highlight the urgent need for preventive public health measures, awareness campaigns, environmental monitoring, and early cancer detection programmes. Government authorities and healthcare institutions should strengthen cancer prevention strategies and improve healthcare accessibility in Chhattisgarh.

REFERENCES:

1. Sinha, A. K., Jain, R. R., & Pradhan, S. K. (2018). Epidemiological trend of cancer among patients at Regional Cancer Center, Dr. B. R. Ambedkar Memorial Hospital, Raipur. *International Journal of Health Sciences and Research*, 8(2), 53–59. (ijhsr.org)
2. World Health Organization. Global Cancer Reports.
3. National Cancer Registry Programme, India.
4. Journal of Family Medicine and Primary Care. Clinicopathological profile of breast cancer from Chhattisgarh. (pmc.ncbi.nlm.nih.gov)
5. Balco Medical Centre, Raipur – Cancer care and awareness initiatives. (balcomedicalcentre.com)