

# Occupational Cancer: Public Health Interventions to Minimize its Burden and Impact on the Society

## To The Editor:

Cancer has emerged as a major public health concern owing to its magnitude, worldwide distribution, and impact on the quality of life, financial burden on the patient/family/society/ health care delivery system, and associated mortality [1]. Recent estimates have revealed that in the year 2012, almost 14.1 million new cancer cases have been reported and 8.2 million cancer deaths have occurred [2]. However, the issue of concern is that around 57% of the new cancer cases and 65% of the reported mortalities are from developing nations [2, 3].

Findings of a study have shown that approximately 19% of all types of cancers have been attributed to the environmental factor [1]. Almost 900 potential carcinogens have been identified and evaluated for their carcinogenic potential in the workplace, a major fraction of which is preventable [2, 4]. The rise in the incidence of occupational cancer has been observed in both developed nations (probably because of exposure to environmental carcinogens for more than five decades) and developing nations owing to the less stringent enforcement of occupational health standards [5-7]. Cancers of occupational origin have resulted in a significant impact on the potential years of life lost, potential years of working life lost, and lifetime expenditure on health care expenses (viz. medical costs, work-related costs, and the cost of support services required by medical conditions) [8, 9].

A wide range of potential factors have been identified that have contributed to the rising trends of occupational cancer such as exposure to environmental carcinogens (viz. asbestos, silica, arsenic, etc.) [10]; ionizing radiations [11]; employment in cancer-prone industries (viz. construction, mining, etc.) [12]; use of second-hand or old-fashioned equipments that are unsafe [13]; non-availability of personal protective equipments [13]; poor awareness among workers about occupational hazards [14]; poor attitude of physicians regarding prevention of occupational cancers [15]; no practice of pre-placement

examination or periodic medical examination [13]; and social inequalities [16].

Although the number of known and suspected occupational carcinogens is extensive and continues to grow, it appears that the current scientific effort is not keeping pace with the need [5]. In fact, all these identified potential risk factors provide multiple avenues that can be explored for reducing the burden of the disease [17]. In addition, factors like insufficient funding, lack of exposure data, absence of exact estimates of the occupational cancer, and dearth of appropriate research work have significantly hampered the global efforts to combat the burden of occupational cancers [13, 18, 19]. Furthermore, the World Health Organization has disclosed that prevention of exposure to carcinogens in the workplace may be the most efficient way to prevent cancer [1, 2].

Recognizing the magnitude of the menace and its influence on multiple domains of society and health system, most of the countries have undertaken efforts to prevent occupational cancer through control of carcinogenic exposures [5, 7, 20]. However, in order to reduce the magnitude of occupational cancer/decrease the burden on the health care delivery system/improve the quality of life of workers, there is an immense need to formulate a holistic strategy which should respond to the needs of all stakeholders [8, 20]. This holistic strategy should consist of a range of elements such as better surveillance system so that the exact burden of the cancer can be ascertained and resource allocation can be planned [19, 21]; setting maximal exposure limits for the carcinogenic chemicals [2,10]; encouraging the practice of pre-placement and periodic medical examination [13]; creating awareness among workers [14]; advocating use of personal protective equipments [13]; sensitizing physicians about different carcinogenic elements [15]; advocating the use of tools and methods for measuring the occupational exposure to carcinogens (viz. use of dosimeter to assess development of radiation induced malignancies) [3, 4, 10, 17, 22]; expanding social security services and insurance benefits to workers diagnosed with occupational cancer [13, 23]; and promoting research (viz. in the

area of identification of new carcinogens and target organs, study of interactions, and special exposure circumstances) [19, 24]; can also be done based on the type of industry to minimize the incidence of occupational cancer.

To conclude, a significant rise has been observed in the incidence of occupational cancer and there is an immense need to plan and implement scientific interventions to minimize thousands of unnecessary deaths and sufferings from occupational cancer.

## Conflict of Interest

None to be declared.

## Authors' Contribution

Dr Saurabh Shrivastava: Conception and design, Drafting of the article, Review of literature, Guarantor

Dr Prateek Shrivastava: Drafting the article, Review of literature, revising it critically for important intellectual content

Dr Jegadeesh Ramasamy: General supervision of the research, Overall guidance in writing the manuscript.

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