



Non-Communicable Diseases and Urban Air Pollution: Call for action on social, environmental, and commercial determinants

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ABSTRACT

Air pollution of both ambient and household has become a major threat to health and prosperity globally, and especially in low- and middle-income countries (LMICs). The 2017 Lancet Commission on pollution and health noted pollution's deep inequity through the high burden of pollution-related deaths and pollution's economic losses in LMICs. Cardiovascular and respiratory diseases claiming lives and ranked among the top 10 causes of mortality by the Global Burden of Disease study 2019,

By performing machine learning using the GBD data 2017, it was found that there exist a positive and strong correlation between Socio-Demographic Index and four NCD-specific indicators such as NCD mortality, air pollution mortality, household air pollution and occupational risk burden. Therefore, the socio-economic development activities such as rapid urbanization and industrialization greatly influences the NCD burden in the South-Asian countries, which is also identified as evidence of primary source of air pollution. Biomass burning is also one of the primary sources. Further, fossil fuel combustion from commercial production and energy, re-suspension of dust in residential areas, dust from construction and vehicle movements, road dust, agricultural production issues were the secondary sources.

In conclusion, many of these sources can be mitigated by improving the environmental dimension of the social determinants of health especially the improvement of daily living conditions considering the factors income, occupation, education, and ethnicity to minimize the inequalities in exposure to environmental risks. An effective planning and expansion of nature-based solutions like urban green spaces could be one of the local solutions for the global challenges of prevalence of NCDs, air pollution and climate change. In addition, commercial determinants are urgently needed to be addressed as prominence of individual and household level behavior change interventions might burden populations already impacted by inequities. Further research must be promoted to establish the nexus between the social, environmental, and commercial determinants of health.

BIOGRAPHY

Nilanjan Bhor is trained in Health Information Management, and currently pursuing WHO-TDR sponsored Master of Public Health. He has more than a decade of experience in contributing to public health research, practice, and capacity building. His expertise areas are health information management system, health program implementation, monitoring and evaluation, and social and environmental determinants of health.



3rd INTERNATIONAL CONFERENCE ON GLOBAL HEALTHCARE AND NUTRITION

November 13-14, 2023 | Dubai, UAE

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Mode of Presentation: Oral.

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