

The hazardous consequences of rising air pollution on perinatal outcomes

Ahmed Kamal Siddiqi

Dear Editor, Adverse birth results, for example, preterm birth (PTB: under 37 weeks of pregnancy) and low birth weight (LBW: under 2.5kg) have been connected to a rise in neonatal bleakness and mortality with possible formative disabilities and probability of various infections in adulthood.¹ All around the world, preterm birth is the central reason for neonatal mortality, adding to (35%) of world's neonatal mortality. Additionally, it's the cause of lifetime disabilities and many chronic diseases. Annually 15 million pre-term children are conceived, around 1 million die due to complications.² Over 60% of preterm births happen in South Asia and Sub-Saharan Africa. On the other hand, low birthweight children experience development impediments and intellectual developments in later life.² Hazard factors connected to these adverse birth results incorporate maternal age, drinking, smoking, infection during pregnancy, repeated pregnancies and so forth.¹

Nonetheless, there is developing proof that air contamination assumes a critical part in event of ominous birth results.¹ As of late, another review links air contamination to 6 million pre-term births and 3 million underweight newborn children in 2019 because of air contamination. The review shows that indoor air contamination, principally from cooking ovens represents 2/3rd of these perinatal results.³ Air holding fine particulate matter (PM) of 2.5 micrometers or less is related to antagonistic neonatal results. Persistent PM2.5 exposure induces conceptive toxicity refereed by placental DNA methylation and maternal inflammatory reactions, proposing a connection between PM2.5 exposure and preterm birth hazard.⁴ The particles have likewise been related to pregnancy-instigated hypertensive problems, expanding the danger of development impediment and preterm birth.³

As indicated by this new study, over 92% of the worldwide population lives in regions where the air quality is underneath the limits as far as possible set by World Health Organization (WHO), and around 49% are presented to similarly undeniable degrees of indoor air contamination.³ The study also discovered that air contamination is generally widespread in South Asia and sub-Saharan Africa, two regions with universally the most noteworthy preterm

4th Year MBBS Student, Ziauddin Medical University, Karachi, Pakistan.

Correspondence: Ahmed Kamal Siddiqi. e-mail: ahmedsiddiqi2020@gmail.com

births. Study's authors conclude that decreasing the air contamination in these two regions could essentially diminish the frequency of preterm birth and low birth weight by 78% worldwide.³

Pakistan ranked 2nd out of 106 countries globally with respect to air pollution in 2020 while, the PM2.5 concentration is currently x5.9 times above the WHO's annual air quality guideline value.⁵ Given this high exposure pervasiveness, there is a need to fundamentally analyze the evidence and survey the burden. Preventive measures ought to be taken like, pregnant ladies should be made mindful that exposure to air contamination is hazardous to health, very much like smoking and drinking during pregnancy and ought to be a vital piece of pre-birth care. Mothers investing significant measure of time in an unpolluted air should be given (N95) or (N99) masks. Individuals utilizing solid fuels for housewarming ought to supplant with cleaner ones. At last, at a metropolitan scale, there should be execution of approaches to decrease poisonous outflows from traffic and production lines to ensure human wellbeing.

Disclaimer: None.

Conflict of Interest: None.

Funding Disclosure: None.

DOI: <https://doi.org/10.47391/JPMA.5319>

References

1. Guo LQ, Chen Y, Mi BB, Dang SN, Zhao DD, Liu R, et al. Ambient air pollution and adverse birth outcomes: a systematic review and meta-analysis. *J Zhejiang Univ Sci B* 2019;20:238-52. doi: 10.1631/jzus.B1800122.
2. Kassahun EA, Mitku HD, Getu MA. Adverse birth outcomes and its associated factors among women who delivered in North Wollo zone, northeast Ethiopia: a facility based cross-sectional study. *BMC Res Notes* 2019;12:357. doi: 10.1186/s13104-019-4387-9.
3. Ghosh R, Causey K, Burkart K, Wozniak S, Cohen A, Brauer M. Ambient and household PM2.5 pollution and adverse perinatal outcomes: A meta-regression and analysis of attributable global burden for 204 countries and territories. *PLoS Med* 2021;18:e1003718. doi: 10.1371/journal.pmed.1003718.
4. Kwag Y, Kim MH, Ye S, Oh J, Yim G, Kim YJ, et al. The Combined Effects of Fine Particulate Matter and Temperature on Preterm Birth in Seoul, 2010-2016. *Int J Environ Res Public Health* 2021;18:1463. doi: 10.3390/ijerph18041463.
5. IQAir. Air quality in Pakistan. [Online] 2021 [Cited 2021 December 19]. Available from URL: <https://www.iqair.com/>