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AIR QUALITY INDEX AND HEALTH DYNAMICS IN CHANGING CLIMATE OF THE NIGER DELTA REGION OF NIGERIA

ABSTRACT
The study was set to assess the effect of air quality index on health dynamics in the Niger Delta Region of Nigeria. Epidemiological data was collected from the Federal Ministry of Health and from various State Ministries of Health, in relation to ambient Air Quality data of the States and National Ambient Air Quality Standard data. The study covered a period of ten years, ranging from 2011 to 2021. The standard deviation (SD) and variance was determined while the estimated coefficient of variation (CV%) was used to assess the variation in the concentration levels of the air pollutant monitored. ArchGIS software was used to generate the pollutants concentration maps, while Sim-air quality software was used to calculate the air quality index of the air pollutants. It was found that a total number of 83,579 disease cases were reported during 2011 to 2021, out of which 103 patients died. The diseases found to be prevalent in the study area are pneumonia, pulmonary tuberculosis, upper respiratory tract infection (URT), cerebrospinal meningitis (CSM), and whooping cough (pertusis). The ambient air quality observed in the states (lead = 0.1115 ppm/year, particulates = 10 ppm/year, N-oxides = 2.55 ppm/year, SO2 = 1 ppm/year, VOC = 82.78 ppm/year) was far worse than the World Health Organization Air Quality Standard (Lead = 1 × 10-6 ppm/year, particulates = 105 ppm/year). This study recommends that environmental education should be intensified and air quality monitoring stations installed at strategic locations for continuous monitoring and evaluations.

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