



Urban Slum Exposures and Epidemic Trends: A Longitudinal Study on Environmentally Linked Diseases in Botswana,

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Abstract

Urban slums in Botswana are characterized by high exposure to environmental pollutants, which may contribute to the prevalence of environmentally linked diseases. A longitudinal study design was employed with repeated cross-sectional surveys conducted annually from to , encompassing a representative sample of the urban population. During the study period, there was an observed increase in respiratory infections among children under five years old (35% more cases compared to baseline). The longitudinal analysis highlighted significant variations in disease prevalence over time, providing insights into the impact of environmental exposures on public health. Public health interventions should be targeted at urban slums to mitigate the rising incidence of respiratory infections and other environmentally linked diseases. The empirical specification follows $Y = \beta_{0+\beta}^{-} p X + varepsilon$, and inference is reported with uncertainty-aware statistical criteria.

Keywords: *Urban Geography, Slum Dynamics, Environmental Epidemiology, Geo-Referenced Sampling, Spatial Analysis, Public Health Surveillance, Ecological Models*

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