

Geospatial analysis of antenatal care utilization and skilled birth attendance in Zimbabwe

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Abstract

The study examined the spatial distribution of women who received four or more Antenatal Care (ANC) visits and skilled birth attendance (SBA) during childbirth. It analyzed 4,833 women who had given birth within five years of the 2015 Zimbabwe DHS survey. Descriptive statistics and logistic regression were used to assess the prevalence and determinants of 4+ ANC visits and SBA utilization. The prevalence of 4+ ANC visits was 76.4%, while SBA utilization was 83.3%. Utilization of 4+ ANC visits increased with age, education, and wealth index, with women aged 35+ being 1.2 times more likely to utilize 4+ ANC visits compared to those aged 15–24. Wealthier women were 117% more likely to utilize 4+ ANC visits. Of women who received 4+ ANC, 63.7% also received SBA. SBA utilization also increased with higher education and wealth. Spatial analysis showed a significant positive spatial autocorrelation (Moran's $I = 0.163$, $p = 0.041$) for SBA, indicating regional disparities. The study suggests that spatial analysis can identify areas with low coverage, allowing for targeted resource allocation to reduce health imbalances across provinces.

Keywords: Geospatial, antenatal care, skilled birth attendance, spatial autocorrelation, Zimbabwe