Applicant Information

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Abstract Details

Title:

Spatial Distribution and Risk Factors of Drug-Resistant Tuberculosis among Patients Treated with the DOTS Strategy in the Upper East Region of Ghana

Category:

Communicable diseases (Malaria,Â TB,Â HIV,Â NTD)

Authors:

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Objectives:

Drug-resistant tuberculosis (DR-TB) remains a critical global health challenge, particularly in low- and middle-income countries like Ghana. The disease is difficult and expensive to treat, with severe side effects. Despite the Directly Observed Treatment, Short-course (DOTS) strategy being implemented in Ghana, DR-TB persists, especially in the Upper East region. This study seeks to spatially map and identify risk factors associated with DR-TB among tuberculosis patients in the Upper East region.

Method:

A 1:2 matched case-control study was conducted with 102 participants in the region between 2018 and 2022. Cases were patients diagnosed with DR-TB, while controls were non-DR-TB patients, matched by age and sex. Data was obtained from TB registers and structured interviews using the Kobo Collect application. Descriptive statistics, Chi-square tests, and conditional logistic regression were used to identify significant associations ($p<0.05$). QGIS was used to map the cases.

Results:

Among 102 participants (34 cases and 68 controls), the median age was 40.5 years. DR-TB cases were clustered in mining districts, with higher prevalence near mining activities. All DR-TB cases exhibited resistance to Rifampicin, with 55% being poly DR-TB. Patients living alone had a significantly higher risk (aOR=4.08, $p<0.04$) of developing DR-TB compared to those living with family. Patients with a history of previous TB treatment were 6.51 times more likely (aOR=6.51, $p<0.016$) to develop DR-TB.

Conclusion:

Living alone and prior TB treatment are significant risk factors for DR-TB. Targeted interventions focusing on family support, healthcare worker follow-up, and improved occupational safety in mining areas are recommended.

Submission Date:

2024-09-23 17:13:43