The Effect of Slum Neighborhoods on Pregnancy Outcomes in Tanzania: Secondary Analysis of the 2015-2016 Tanzania Demographic and Health Survey Data

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Abstract : Global urbanization has resulted in the expansion of slums, leaving over 10 million Tanzanians in urban poverty and at risk of poor health. Whilst rural residence has historically been associated with an increased risk of adverse pregnancy outcomes, recent studies found higher perinatal mortality rates in urban Tanzania. This study aims to understand to what extent slum neighborhoods may account for the spatial disparities seen in Tanzania. We generated a slum indicator based on UN-HABITAT criteria to identify slum clusters within the 2015-2016 Tanzania Demographic and Health Survey. Descriptive statistics, disaggregated by urban slum, urban non-slum, and rural areas, were produced. Simple and multivariable logistic regression examined the association between cluster residence type and neonatal mortality and stillbirth. For neonatal mortality, we additionally built a multilevel logistic regression model, adjusting for confounding and clustering. The neonatal mortality ratio was highest in slums (38.3 deaths per 1000 live births); the stillbirth rate was three times higher in slums (32.4 deaths per 1000 births) than in urban non-slums. Neonatal death was more likely to occur in slums than in urban non-slums (aOR=2.15, 95% CI=1.02-4.56) and rural areas (aOR=1.78, 95% CI=1.15-2.77). Odds of stillbirth were over five times higher among rural than urban non-slum residents (aOR=5.25, 95% CI=1.31-20.96). The results suggest that slums contribute to the urban disadvantage in Tanzanian neonatal health. Higher neonatal mortality in slums may be attributable to lack of education, lower socioeconomic status, poor healthcare access, and environmental factors, including indoor and outdoor air pollution and unsanitary conditions from inadequate housing. However, further research is required to ascertain specific causalities as well as significant associations between residence type and other pregnancy outcomes. The high neonatal mortality, stillbirth, and slum formation rates in Tanzania signify that considerable change is necessary to achieve international goals for health and human settlements. Disparities in access to adequate housing, safe water and sanitation, high standard antenatal, intrapartum, and neonatal care, and maternal education need to urgently be addressed. This study highlights the spatial neonatal mortality shift from rural settings to urban informal settlements in Tanzania. Importantly, other low- and middle-income countries experiencing overwhelming urbanization and slum expansion may also be at risk of a reversing trend in residential neonatal health differences.

Keywords : urban health, slum residence, neonatal mortality, stillbirth, global urbanisation

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