

## **Risk Factors for Acute Respiratory Infection Among Children Under Five in Tanzania: A Systematic Review and Analysis of the 2015 Demographic and Health Survey for Tanzania**

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**Abstract :** It is currently estimated that over a third of deaths in children under five in Tanzania are caused by acute respiratory infections (ARIs). However, despite being one of the leading causes of morbidity and mortality across the developing world, its risk factors are poorly understood. Therefore, a systematic review of the literature published between 2015 and 2020 was conducted, focusing on risk factors for ARI in Tanzanian children under the age of five. 2015 Demographic and Health Survey (DHS) for Tanzania was analysed to supplement these findings with national data. 2224 papers were retrieved from two databases and were analysed by three independent reviewers. Thirteen papers were eligible for inclusion, covering a wide range of risk factors among which comorbidities (n=6), malnutrition (n=5), lack of parental education (n=4), poor socio-economic status (n=3), and delay in seeking healthcare (n=3) were the most cited risk factors. The risk factors with the highest reported risk ratios/odds ratios were lack of parental education (RR=11.5-14.5), followed by enrolment in school (RR=4.4), delay in seeking healthcare (RR=3.8) and cooking indoors (aOR =1.8-RR=5.5). The DHS data provided local context to these risk factors. For instance, the number of children experiencing symptoms of ARI in both urban and rural areas ranged between 4.5-5% in the two weeks prior to the survey. However, 79% of symptomatic children in Zanzibar received antibiotics for treatment compared to just 34% of those in the Southern Highlands. As demonstrated by both the systematic review and the DHS analysis, risk factors for ARI are predominantly socially determined, with Tanzania's poorer rural children possessing the highest risk for ARI and more adverse health outcomes. Therefore, the burden of ARIs in Tanzanian children may be alleviated through the provision of appropriate treatment and parental education in rural areas.

**Keywords :** acute respiratory infection, child, health education, morbidity, mortality, pneumonia, Tanzania

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