.Y 2022

A Scoping Review of Household Air Pollution from Solid Fuels and Lung Cancer Risk in Non-Smoking Women in Rural Oromia, Ethiopia: An African Contextual Analysis

T, i, g, i, s, t, G, e, m, e, c, h, u, ,, M, e, k, d, e, s, A, b, e, b, e, ,, H, a, i, l, u, T, a, d, e, s, s, e

DOI: https://doi.org/10.5281/zenodo.18539397

Abstract

Household air pollution from solid fuel combustion is a significant public health issue in sub-Saharan Africa. In rural Ethiopia, where wood, charcoal and dung are primary energy sources, non-smoking women experience disproportionate exposure. The specific risk for lung cancer in this demographic within the Oromia region is not well synthesised. This scoping review aimed to map and synthesise evidence on the association between household air pollution from solid fuels and lung cancer risk among non-smoking women in rural Oromia, Ethiopia. It sought to identify key themes, research gaps, and contextual factors within the African setting. A systematic scoping review methodology was employed. Multiple electronic databases were searched for relevant literature. Studies were included if they focused on non-smoking women, solid fuel use, household air pollution, and lung cancer risk or related respiratory outcomes in rural Oromia or comparable Ethiopian settings. Data were charted and analysed thematically. The search yielded a limited number of primary studies directly investigating lung cancer incidence. However, a consistent theme across the literature was a strong positive association between prolonged solid fuel smoke exposure and the prevalence of chronic respiratory symptoms and pre-malignant changes, which are established risk factors for lung cancer. A notable proportion of studies highlighted the compounding effect of poor ventilation. Existing evidence, though limited,

suggests a plausible link between household air pollution from solid fuels and increased lung cancer risk for non-smoking women in rural Oromia. The review underscores a significant gap in direct epidemiological data on cancer outcomes within this specific population and context. Investment in longitudinal, population-based studies is needed to quantify cancer risk. Public health interventions should focus on promoting cleaner cooking technologies and improved ventilation. Further research should integrate qualitative assessments of socio-cultural barriers to adopting clean fuels. household air pollution, solid fuels, lung cancer, non-smoking women, Oromia, Ethiopia, scoping review This review consolidates the available evidence on this specific environmental health risk within an under-researched African population, providing a foundation for future research and targeted public health action.