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# A Qualitative Exploration of Child Mercury Exposure and Artisanal Gold Mining Proximity in Ghana's Prestea-Huni Valley District

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## Abstract

Artisanal and small-scale gold mining (ASGM) is a key economic activity in Ghana and a major source of environmental mercury pollution. Children in communities near mining sites are at heightened risk of exposure, which can cause severe neurological and developmental harm. The Prestea-Huni Valley District is a notable ASGM hub, yet the lived experiences and perceived exposure pathways for children in this region are not well documented from a qualitative perspective. This study aimed to qualitatively explore community perceptions and experiences regarding the link between residential proximity to ASGM operations and child health, with a focus on suspected mercury exposure. It sought to identify perceived exposure routes, health symptoms, and community-level challenges in mitigating risk. A qualitative, exploratory study was conducted using semi-structured interviews and focus group discussions. Participants included caregivers of children under 12, community health workers, and local leaders from four purposively selected communities at varying distances from active ASGM sites in the Prestea-Huni Valley District. Data were analysed using thematic analysis. A prominent theme was the direct linkage participants made between living closer to mining zones and a higher perceived burden of child health issues. Symptoms such as skin rashes and persistent coughs were commonly attributed to mercury. Caregivers in proximal communities reported frequent visible dust deposition from ore processing in homes. Perceived exposure routes included inhalation of contaminated dust, direct contact with contaminated water and soil, and consumption of locally caught fish. Community members perceive a clear connection between ASGM proximity and adverse child health outcomes, which they attribute to mercury exposure. The findings highlight a critical gap between community awareness of the risks and the available resources or authority to enact protective measures, underscoring a sense of vulnerability. There is a need for targeted public health education campaigns on mercury exposure prevention within households. Concurrently, environmental monitoring and stronger regulatory enforcement are required to reduce contamination at source. Community-based participatory initiatives should be developed to support local risk mitigation. artisanal mining, mercury exposure, child health, qualitative research, Ghana, environmental health, community perceptions This study provides in-depth qualitative evidence from community perspectives on the perceived pathways and health impacts of child mercury exposure near artisanal gold mining sites, informing context-specific public health interventions.

**Keywords:** *Artisanal and small-scale gold mining, Mercury exposure, Child health, Sub-Saharan Africa, Qualitative research, Environmental health, Thematic analysis*

# ABSTRACT-ONLY PUBLICATION

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