Batavia Residents' Knowledge and Perception of the Potential Health and Environmental Risks of an Upstream Cyanide Spill from Gold Mining

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In 1995, a tailings dam at Omai Gold Mining Limited collapsed releasing over 3.2 billion litres of cyanide into the Essequibo River. This incurred both ecological and socio-economic consequences, affecting residents who relied on the river for multiple uses. Communities are often unaware of established mining camps, the dangerous chemicals used in their operations, and the risk they pose downstream. This study aimed to assess community knowledge and perception of the risks associated with an upstream cyanide spill in the Cuyuni River; given that an upstream mining operation was using cyanide in its operations. A cross-sectional survey was conducted in the riverine community of Batavia, Cuyuni-Mazaruni (Region VII), Guyana. A community census was conducted using a structured survey, for which 60 households participated. The results revealed that 41.7% (n=25) of respondents were not knowledgeable of both the environmental and health risks of cyanide. More females were knowledgeable of environmental risks (n=26, 43.3%) and health risks (n=21, 35%) than males (n=9, 15%) and (n=14, 23.33%), respectively. Respondents regarded environmental risks (53.33% (n=32)) and health risks (60% (n=36)) to be very important. A weak, positive correlation existed between knowledge of health and environmental risks and the perception of these risks among participants ($r=0.29$, $n=60$, $p<0.05$). The inadequate knowledge of risks and awareness in Batavia regarding a cyanide spill renders the community as underprepared to effectively address associated risks. This limited knowledge and awareness increases the potential for stakeholder conflict and inappropriate response in the event of another cyanide spill. These findings can be used to inform regulatory agencies of the community engagement needed to ensure readiness of Batavia and other communities from upstream mining operations that use cyanide.

Keywords: Cyanide spill; knowledge; perception