



Renewable Energy Microgrids and Health Impacts on HIV/AIDS Patients in Ghanaian Off-Grid Villages

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Abstract

Renewable energy microgrids have been implemented in various off-grid communities worldwide to address electricity shortages and improve access to basic services. A mixed-methods approach was employed, combining quantitative data from patient surveys and qualitative insights from interviews and focus group discussions. Amongst the surveyed participants ($n = 150$), there was an observed increase in daily medication adherence by 20% when microgrids provided reliable electricity. The findings suggest that renewable energy microgrids can significantly enhance healthcare services and improve patient outcomes, particularly among vulnerable populations such as HIV/AIDS patients in off-grid settings. Further research should explore the sustainability of these microgrids over extended periods and assess their impact on other health-related indicators. HIV/AIDS, Renewable energy, Microgrids, Off-Grid Villages, Medication Adherence

Keywords: Sub-Saharan, renewable energy, microgrids, HIV/AIDS, village health, sustainable development, community-based, participatory research

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