

Injury, energy poverty and climate change

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Energy impoverished communities are those that are reliant on 'traditional' solid fuels, such as wood and coal, and flammable hydrocarbons, such as paraffin (or kerosene). These fuels are typically burnt in inefficient, polluting and unsafe stoves. Energy poverty is pervasive with about 2.6 billion people that use these fuels for cooking or heating their homes.^{1,2} The health and economic consequences for these communities are far-reaching, and for many families even catastrophic. Energy poverty is a significant contributor to poor health, including burn injury and poisoning, and through household air pollution a sizeable contributor to the global climate crisis.³

The injury and health outcomes are widely reported in Africa, Asia and South America, and especially manifest in communities that rely on fossil fuels. The use of paraffin in particular, has been associated with greater risks for injury, either directly through stove explosions and candle fires, or indirectly through scalding while cooking on structurally deficient or insecure stoves, and through poisoning after ingestion, and other ill effects after toxic fume inhalation. The widespread use of unsound stove technology presents an ignition risk that is amplified in dense, 'informal' urban settlements. In these urban conurbations, which continue to expand across Africa, Asia and elsewhere, dwellings are typically made or 'clad' with wooden boards or other flammable material, with a dense internal layout, and where dwellings are close to each other. Thus, 'accidental' fires are often triggered by a faulty paraffin appliance and may lead to a widespread and devastating community conflagration.

Beyond its injury and health impact, the socioeconomic ramifications of energy poverty are enormous, constraining

development in the affected countries while simultaneously contributing to the global climate crisis.³ The United Nations Sustainable Development Goal 7 has recognised the multiple impacts of energy impoverishment and globally formalised the call for an inclusive transition to safe and health-promotive energy. However, the management of such an energy transition, especially one that specifically favours the impoverished will not be easy, and most likely constrained by the needs of global corporate interests, capitalist profit driven economies, and global and regional institutional incapacity to support such an energy transition.⁴

Despite such challenges, there is increasing consensus that the access to safe and clean domestic energy is pivotal to global progress and well-being in the current century and a prerequisite for other developmental priorities beyond health, including environmental sustainability, economic development and gender equality.¹ An inclusive energy migration will offer a number of key opportunities for the injury prevention movement. First, for a global energy transition to be considered just, global and regional energy and social policies should foreground the needs of energy-impooverished communities¹ and in so doing would arguably also contribute to the global (and multisectoral) solidarity that an inclusive energy migration requires. The injury prevention sector should support this. Second, there is an opportunity for partners from governments, civil society, academia and the health sectors to focus on energy poverty as a key determinant to the persisting burns, paraffin poisoning and other health related concerns in Africa, South-East Asia and elsewhere. Further energy and injury nexus research can unpack the multifaceted human, material and system pathways that connect energy poverty and its health outcomes. Third, this is an opportunity to deepen the evidence base for modern forms of energy, especially renewable energies. It must be noted that non-renewable resources are argued in some regions for inclusion in interim arrangements, especially in settings where these may be abundant and easily accessed.⁵ Solar,

wind, biogas and hydro technologies may however offer several health and safety advantages, through reliable power when used with batteries, cost-effectiveness and scaling up potential, and may allow for a transition to clean energy without an interim phase involving fossil fuels.^{2,5} The injury prevention sector could interrogate the safety and other climate change benefits of modern energies over time.

There are currently millions that still lack access to modern energy, including 800 million people on the African continent alone, with high rates of energy-related ill health, including injuries due to burns and poisoning. The energy technology advances to respond to the energy impoverishment underlying this health burden have in the interim rapidly evolved. Despite the inevitable challenges to the implementation of effective energy solutions, organisations and networks from the energy, health and injury prevention sectors are called on to actively engage with governments and civic partners in regional and national fora to support and expedite the implementation of locally suitable, clean and especially safe energy solutions.

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