Ethical issues arising in research into health and climate change

Pecha Kucha presentation

Ethical dimensions of the Multi-Tier Framework: balancing gender equity, health, and climate justice

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Introduction
The intersection of gender equity, health, and climate justice presents critical ethical challenges in modern energy services. This case study explores these ethical dimensions through the lens of the Multi-Tier Framework (MTF) for Modern Energy Services for Cooking (MECS), focusing on low- and middle-income countries (LMICs). The MTF assesses household energy access, evaluating dimensions such as air pollution, efficiency, comfort, and safety. This study highlights the intersection of gender inequality, climate change, and health within the MECS initiative and proposes an ethically sound approach to addressing these interconnected challenges.

Brief description of context
Household air pollution (HAP) caused by traditional cooking methods leads to over 4 million premature deaths annually (World Bank, 2020). Women, particularly in LMICs, are disproportionately affected by the health impacts of HAP and the labour-intensive task of gathering fuel.

The MTF was developed by the World Bank's Energy Sector Management Assistance Program (ESMAP) in collaboration with Loughborough University to evaluate cooking energy solutions across multiple dimensions, beyond binary assessments of whether households have access to energy. It assesses critical attributes such as convenience, fuel availability, safety, affordability, efficiency, and exposure to harmful emissions, providing a nuanced understanding of energy access (World Bank, 2020).

The MTF serves as both a research and policy tool in understanding and addressing energy access, health, and climate challenges. While initially conceived as an evaluation framework to assess the access to modern energy, it has evolved to provide key insights that inform policy decisions and research studies, especially around health impacts related to energy use. Research is ongoing to assess the effectiveness of MTF-driven interventions in improving health outcomes, particularly through reduced exposure to household air pollution (HAP). However, significant ethical questions surround the implementation of these interventions, especially regarding justice, equity, community participation, and research practices.

Discussion of ethical issues

a) Gender equity and health

Ongoing studies examine the reduction of HAP and health improvements among vulnerable groups, especially women in LMICs. This evaluation positions MTF not only as a policy tool but as an instrument supporting robust health research. For example, in Kenya, there have been reports of significant health improvements, such as a reduction in chest pains and respiratory problems (Impact Story Booklet: Modern Cooking Technologies in Kenya, 2023). However, women might

not have the authority when research is being carried out to make decisions about adopting these technologies. This can limit the framework's ability to effectively improve gender equity in health.

b) Intergenerational and intra-generational justice

The ethical dilemma of balancing the needs of current and future generations is central to the MTF. While the transition to cleaner cooking technologies offers long-term benefits for future generations by reducing greenhouse gas emissions, the present generation bears the immediate economic and infrastructural burdens. This raises concerns about intergenerational equity. Moreover, intra-generational justice must be considered, ensuring that vulnerable populations, such as women and low-income households, are not disproportionately affected by the costs and challenges associated with these transitions.

The MTF's focus on addressing historical injustices through equitable energy solutions is commendable, but it must ensure that its interventions do not create new forms of social or economic dependency. The framework must also consider how these interventions affect marginalised groups beyond gender, including Indigenous communities and people with disabilities, who may face unique challenges in accessing modern energy services. A broader focus on these groups would enhance the framework's commitment to intra-generational justice, ensuring equitable access to clean energy for all vulnerable populations.

c) Epistemic justice and participatory research

Epistemic justice is a critical ethical concern in climate and health research, referring to the fair inclusion of diverse knowledge systems, particularly those of marginalised and Indigenous communities. The MTF must go beyond recognising local knowledge and actively integrate these systems into the research process. This means ensuring that Indigenous and local communities are not only consulted but are also involved in setting research priorities, designing interventions, and making decisions about energy transitions. Participatory research approaches, such as co-creation, should be central to the MTF initiative, helping to dismantle existing power imbalances in research (Levy & Patz, 2015).

To further strengthen participatory research, the MTF could establish community advisory boards that work alongside researchers and policymakers. These boards would ensure that the concerns and preferences of local populations—particularly marginalised groups—are central to decision-making processes. Additionally, the integration of Indigenous knowledge systems could enhance the cultural relevance of proposed solutions, making them more effective and sustainable in the long term.

d) Environmental impact and sustainability

In addressing climate justice, the MTF must also consider the environmental footprint of the research and interventions it promotes. While the primary goal is to reduce carbon emissions from household cooking, the broader environmental costs—such as the carbon footprint of conducting research, producing technologies, and transporting them—must also be addressed.

e) Respect for non-human health and ecosystem impacts

Human and non-human health interconnectedness is central to the One Health approach, which recognises the interdependence of humans, animals, and ecosystems (Gibbs, 2014). The MTF initiative must consider the broader environmental impacts of its interventions, including the effects on biodiversity and ecosystems. By integrating non-human health into its framework, the initiative can address ethical concerns related to the moral value of ecosystems and non-human species (Gurevich, 2020).

Moreover, the MTF must ensure that its interventions do not inadvertently harm local ecosystems, such as by promoting technologies that require the extraction of unsustainable materials.

Researchers should work closely with local environmental experts and Indigenous knowledge holders to assess the potential ecological impacts of proposed interventions. This would ensure that the initiative upholds both human health and ecological sustainability.

f) Climate justice and immediate ethical dilemmas in research

One key priority in ethical research is addressing immediate ethical dilemmas, particularly those related to fairness, distribution of benefits, and the environmental impact of research. The MTF initiative must ensure that its interventions do not disproportionately burden the populations it seeks to help. For example, while cleaner technologies may reduce long-term health risks, the high upfront costs associated with these technologies could create new forms of inequality, particularly for low-income households.

The MTF initiative must also consider the intellectual and material distribution of research benefits. Who owns the technologies developed through the initiative, and who benefits financially from their deployment? Ensuring that local communities have ownership stakes in these technologies is critical to achieving climate justice. This aligns with the emphasis on fairness and benefit-sharing in research.

Policy implications
While the MTF guides policy decisions, it is also critical in generating data on its effectiveness. Ongoing research examines MTF's role in facilitating better health outcomes, validating its metrics as indicators of reduced health risks from cleaner cooking technologies. This research reinforces MTF's applicability in public health contexts, supporting a feedback loop between MTF's data and policy formation to enhance health-centric energy interventions. (Gardiner, 2011).

Incorporating the MTF's tier-based evaluation into policy frameworks could help create more targeted interventions that respect cultural practices while encouraging the transition to cleaner technologies. Additionally, policymakers must ensure that solutions are scalable and adaptable to different socioeconomic contexts, particularly in remote and underserved regions where access to modern cooking technologies remains a challenge (World Bank, 2020).

Key recommendations:
1. Deepen community participation by establishing advisory boards and actively integrating women's voices and Indigenous knowledge systems into research design and implementation.
2. Address intra-generational justice by ensuring that vulnerable populations, including Indigenous communities, women, children and people with disabilities, are not disproportionately burdened by the costs of transitioning to cleaner technologies.
3. Incorporate environmental sustainability into research practices by minimising the carbon footprint of research activities and using local resources wherever possible.
4. Expand the scope of the MTF framework to include the health of ecosystems and non-human entities, aligning with the One Health approach.
5. Develop policies that ensure the intellectual and material benefits of new technologies are shared equitably with local communities.

Conclusion
The MTF initiative presents a valuable opportunity to address the intertwined challenges of health, gender equity, and climate justice. However, to fully realise its potential, the initiative must address the ethical issues outlined above, particularly those related to epistemic inclusion, intra-generational justice, and environmental impact. By incorporating these considerations into its framework, the MTF can ensure that its interventions are not only effective but also ethically sound and sustainable.

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