A GACD Implementation Science e-Hub Case Study

The importance of establishing acceptability

This case study was developed based on the work of

The effect of solar ovens on fuel use, emissions and health: Results from a randomised controlled trial.

Project team members

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Case study summary

This case study evaluates the introduction of the 'HotPot' solar oven in Senegal to reduce respiratory diseases linked to smoke from traditional cooking stoves. Despite laboratory efficacy, the intervention failed to show real-world health improvements.

Identification and characterisation of implementation issues

Challenges in implementation arose due to the solar oven's size and operational limitations, which led to low adoption rates among households accustomed to cooking with solid fuels.

Selection, adaptation, and application of implementation strategies

A randomised controlled trial aimed to assess the solar oven's effects on fuel use, emissions, and health outcomes, without adequately considering the device's acceptability and suitability for the target population's needs.

Development and delivery of the stakeholder engagement strategy

The project's failure to engage with communities beforehand meant that the solar oven's limitations, such as its insufficient size and inability to be used for multiple purposes or in various weather conditions, were not addressed.

Evaluating implementation

Post-implementation evaluations indicated no significant reduction in carbon monoxide exposure or health symptom improvements, attributed to the infrequent use of the solar oven.

Results and key findings

The study's findings underscore the critical importance of aligning health interventions with the target community's preferences and practical realities, highlighting that the failure was largely due to overlooking these aspects.

Strengths and limitations

The trial's rigorous design provided clear evidence of the intervention's lack of impact, pointing to the necessity of pre-assessment of technology acceptability within the community as a crucial step.

Success factors and challenges

The study identified the need for comprehensive community engagement and the adaptability of interventions to local conditions as key to the success of public health initiatives.

Next steps

Future interventions should prioritise acceptability and practical utility in the design and implementation phases, incorporating thorough community feedback to ensure greater adoption and effectiveness.

References

1. Beltramo, T. and D.I. Levine, The effect of solar ovens on fuel use, emissions and health: Results from a randomised controlled trial. Journal of Development Effectiveness, 2013. 5(2): p. 178-207.
2. Otte, P.P., Solar cookers in developing countries-What is their key to success? Energy Policy, 2013. 63: p. 375-381.
3. Thomas, E., et al., Improved stove interventions to reduce household air pollution in low and middle income countries: a descriptive systematic review. BMC Public Health, 2015. 15: p. 650.

Key learning objectives

1. Learn the importance of assessing the acceptability and practicality of health interventions to align with community needs and preferences.
2. Explore how real-world adoption rates and implementation challenges can impact the effectiveness of health interventions.
3. Recognize the critical role of early and ongoing community engagement in ensuring that interventions are tailored to local conditions and will be widely accepted.