Behavioral interventions in low- and middle-income countries (LMICs)

Understanding the research context

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Transition from Infectious Disease to Non-Communicable Disease

Low- and middle-income countries

- Injures 12%
- Communicable, maternal, perinatal, and nutritional conditions 44%
- Noncommunicable diseases 44%

2002

- Injures 14%
- Communicable, maternal, perinatal, and nutritional conditions 32%
- Noncommunicable diseases 54%

2030

High-income countries

- Injures 9%
- Communicable, maternal, perinatal, and nutritional conditions 6%
- Noncommunicable diseases 85%

2002

- Injures 7%
- Communicable, maternal, perinatal, and nutritional conditions 3%
- Noncommunicable diseases 89%

2030

Bergman et al. 2013; Canadian Geriatrics Journal; Kinsella and He, 2008; International Population Reports
"Cancer is not a disease affecting the affluent and elderly people, and developed countries alone. It is a global epidemic, affecting all ages, in low-, middle-, and high-income countries."
Low and Middle Income Countries Have High Cancer Burden

High Number of Cancer Deaths

- Cancer 4.8M
- HIV/AIDS 2.1M
- TB 1.1M
- Malaria 711K

LMICs Will Bear an Increasingly Disproportionate Burden of Cancer Incidence (in millions)

- 2018:
  - More Developed: 8.1
  - Less Developed: 6

- 2030:
  - More Developed: 15.8
  - Less Developed: 5.2

IARC, 2018; Farmer et al. 2010
Up to 50% of Cancers May Be Preventable through Health Behavior Change

- Tobacco – up to 30%
- Overweight & Obesity – up to 20%
- Diet – up to 5%
- Sedentary Behavior – up to 5%
- Viral Exposure (e.g., HPV) – up to 5%
- Alcohol Consumption – up to 4%
- Sun/Ionizing Radiation – up to 2%
Engaging in Behavioral Intervention Research

- Evidence Generation – Many evidence-based interventions available

We know the *whats*...
Engaging in Behavioral Intervention Research

.. Are we thinking enough about the *hows*?

- Evidence Translation: Behavioral Research Key
  - Implementation research
    - Understanding individual behavior
    - Understanding community characteristics
    - Analysis of systems and organizations – barriers and facilitators to care
  - Incorporating Methods that Engage Communities and Systems
    - Trans-disciplinary approaches
    - Available Tools: GIS, Maps and Visualization, Information Technology

Means et al. Impl Sci, 2020; Yapa and Barnighausen, Impl Sci, 2018
Applying Behavioral Intervention Results

Multiple levels of influence on individual behavior (Social Ecological Model)

US CDC: https://www.atsdr.cdc.gov/communityengagement/pce_models.html
LMIC – One size does not fit all


LMIC are heterogenous entities

- Within and between-country differences
- Unique social and cultural influences on behaviors
- Policy and regulatory environments
- Research funding
- Research collaborations
- Research conduct
Understanding LMIC Context is Key

Context:
Environment or Setting in which research is implemented/evidence is translated (Kitson, Harvey and McCormack, 1998)
Elements of Context for Behavioral Interventions in LMICs

Who

Study Participants: Characteristics, Social and Cultural factors, Gender, Health seeking, Communication, Networks

Considerations before, during and post-research

Where

Study Setting: Geography, Social Determinants, Access to Health services, Enrollment/Recruitment, Data Collection Methods, Time and Logistics

Study Collaborators: Training, Study/Program Management, Data Administration

How
Project ROSE for Cervical Cancer Screening in Malaysia

After taking a self-swab at their clinics or events, the results are sent later via mobile / Image Credit: Program ROSE

HPV testing through self-sampling will break social barriers associated with pap smear and get more women screened.

https://www.programrose.org/
Cervical Cancer Control in rural Argentina

Arrossi et al., 2019 The Lancet Global Health
https://www.youtube.com/watch?v=BHrqvXaTRsg&t=33s
Handwashing in times of Covid19 in Tanzania

Sometimes we think of innovation as the latest cutting-edge engineering coming out of the lab. But that’s not always the innovation we need to solve the most pressing behavioral issues in the world. Sometimes what is needed is to develop more appropriate technologies and make something that is simple and elegant that can really solve the problem,” - Dr. Robert Aunger, Study Co-Lead, LSTMH

Focus Areas for Behavioral Research in LMICs

- Training workforce for behavioral research
- Mentorship
- Research Conduct, Ethics, Leadership
- Working across disciplines
- Build on past research and program investments
- Partners/collaborators
- Assess landscape of health innovations and interventions

Why Global Behavioral Research?

International collaborations provide unique opportunities to further science

- Study of unique behaviors and behavioral patterns
  - Tobacco control (betel quid and areca nut); Exposure patterns across generations – Diet & cancer among US immigrants
  - Insights into under-studied domains: e.g. mental health, stigma, social capital, health economics

- Understand Implementation of Evidence
  - Develop and evaluate innovative interventions for low resource settings
  - Use of technology; frugal innovations

- Understand Processes, Organizational behavior change
  - Improvements in care delivery, patient outcomes

- Inform practice and research in high income communities experiencing disparities
Public health advances and Behavioral Research

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