Case Study: Cognitive Behavioral Therapy in Liberia

Theory of Change and Measuring Outcomes

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Objectives today

• Work through a real world example to show how a Theory of Change helps us:
  – Decide what research questions to ask
  – Decide what data to collect
  – Understand the assumptions required for an intervention to have an impact

• Discuss how to identify valid and reliable indicators for our outcomes

This case study is based on “Reducing Crime and Violence: Experimental Evidence from Cognitive Behavioral Therapy in Liberia” by Blattman, Jamison, and Sheridan (2017), American Economic Review.
Background

- Liberia experienced two civil wars from 1990-1996 and 2001-2003
- Despite tremendous progress, urban crime has been a persistent problem
- Many ‘youth’ aged 18-35 are at high risk of falling into crime
  - Came of age during the crisis
  - Missed-out on skills and education
  - Some are ex-combatants
  - Many feel marginalized by society

Photo: Carly Learson, UNDP (20 November 2014)
How to prevent at-risk youth from falling into crime?

• Usual responses:
  – ‘Tough on crime’ policing
  – Jobs & training

• Cognitive behavioral therapy (CBT)
  – Rooted in psychology and theories of rehabilitation
  – Teaches ‘noncognitive’ skills (‘soft-skills’) like self-control, mindfulness, self-reflection, and planning
  – Promotes a more positive, pro-social self-image
Cognitive Behavioral Therapy (CBT)

- Relative to alternatives, CBT is targeted and short-term, and therefore inexpensive.

- But it’s not a substitute for broader reforms targeting systemic or structural inequities that give rise to crime.

Photo: Network for Empowerment and Progressive Initiatives (NEPI)
Sustainable Transformation of Youth in Liberia (STYL)

- Developed by the Network for Empowerment and Progressive Initiatives (NEPI)
  - Local NGO run by reformed, formerly at-risk street youth
- Consisted of
  - 8 weeks of group therapy
  - 4 hour group sessions, 3x/week
  - Mentorship by facilitators, many of whom graduated the program themselves

Photo: Network for Empowerment and Progressive Initiatives (NEPI)
Sustainable Transformation of Youth in Liberia (STYL)

- Curriculum covered a variety of topics and activities:
  - Talk therapy to help recognize problematic behaviors and identify alternatives
  - Role playing to practice non-aggressive responses to provocations
  - Long-term planning
  - Practicing ‘mainstream’ behaviors like visiting a grocery store or bank

Program Activity: Exposure to “Mainstream” Behaviors
Men practice shopping for goods in a supermarket, using a bank, and other activities, and process successes and failures as a group.
Theory of Change for Cognitive Behavioral Therapy

**Needs**
More positive, pro-social self-image
Soft-skills like self-control, anger management, self-reflection, and planning

**Inputs**
Cognitive behavioral therapy (CBT)

**Outputs**
At-risk youth attend CBT sessions and engage with material

**Intermediate Outcomes**
At-risk youth adopt a more positive, ‘pro-social’ self-image
Learn self-control, planning, and deliberate-decision making skills

**Impact**
Lower risk of falling into crime
More productive economic activity
Measurement concepts

**Construct**
- The main concept being investigated (e.g. involvement in crime)

**Indicators**
- How you actually measure or “operationalize” your construct.

**Data Collection**

**Data**
- Actual values of our indicators from individual respondents
Self-reported crime: a valid and reliable indicator of crime?

- **Number of crimes committed in the past two weeks**: sum of 15 categories of self-reported crime

<table>
<thead>
<tr>
<th>Question</th>
<th>Format</th>
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<tbody>
<tr>
<td>In the last 2 weeks, have you done any pickpocketing?</td>
<td>1-Yes, 0-No, 98-Refuse to answer</td>
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<tr>
<td>How many times?</td>
<td>Number Pad</td>
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<tr>
<td>In the last 2 weeks, have you done any armed robbery?</td>
<td>1-Yes, 0-No, 98-Refuse to answer</td>
</tr>
<tr>
<td>How many times?</td>
<td>Number Pad</td>
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Source: Blattman, Jamison, and Sheridan (2017), Endline Survey
The Goals of Measurement

Reliability
(a.k.a. precision)

Low
High

Validity
(a.k.a. accuracy or unbiasedness)

Low
High

High
Low
Scenario 1: Respondents answer truthfully and accurately

The ideal scenario: Our measure is both valid and reliable
Scenario 2: Respondents answer truthfully but have trouble recalling # of crimes in the past two weeks

We can handle this scenario: Our measure is valid but not precise
Scenario 3: Respondents do not answer truthfully

This scenario is problematic because it implies our measures are not valid
Scenario 4: Respondents in the comparison group answer truthfully but those in the treatment group do not.

Differential measurement error: This scenario is especially problematic.
Measuring sensitive behaviors
How to improve the validity and reliability of self-reported outcomes?

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<tr>
<th>Questionnaire design</th>
<th>Qualitative follow-up</th>
<th>Administrative data</th>
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<tbody>
<tr>
<td>• Frame sensitive questions in non-judgmental terms</td>
<td>• Consider validating survey measures with qualitative follow-up and/or indirect observation</td>
<td>• Use multiple sources of data (e.g. crime or arrest records from the police)</td>
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<td>• Build trust by following survey best practices</td>
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<td>• Avoid questions that won’t be well-received</td>
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Thank you
References and additional resources

- J-PAL Research Resources: “Measurement & Data Collection”