Issues and challenges in evaluating community-based health literacy interventions

Andrew Pleasant, Ph.D.
Director of Canyon Ranch Institute and Global Health Literacy Research
The 5 E approach to health literacy interventions in communities

Ethical health literacy community programming = Effectiveness + Efficiency + Equity + Evaluation
The 5 E approach

**Ethics** - A set of principles of right conduct. A theory or a system of moral values.

**Effectiveness** - Did desired outcome occur?

**Efficiency** - The ratio of the effective output to the total input in any system. Cost per unit of desired outcome.

**Equity** - Fairness, justice – eliminate social, environmental, and health inequities.

**Evaluation** - Required to assure all of the above occurred and to advance the field.
Can an equation be beautiful?

- To be ethical, you must be effective, efficient, and equitable.
- To prove you are effective, efficient, and equitable, you must evaluate.
- Therefore, to evaluate is to be ethical.
Possible goals of evaluation

• Provide valid and reliable evidence of success or failure.
• Justify the program to funders and management.
• Document need for additional resources.
• Indicate areas requiring program modification and improvement.
• Inform policy.
• Facilitate the sharing of best practices.

• Increase organizational understanding of individual programs.
• Encourage cooperative ventures with other organizations.
• Provide a basis for systematic reviews in the future.
• Develop best steps and next steps!
What is evaluation?

Evaluation should be an attempt to produce evidence that can be used to make something better.

Evaluation should produce USABLE, valid, and reliable evidence.
Evidence is not!  (Perkins, 1999)

• A set of morals
• Casual conversations
• A brainstorming session
• Continuing the status quo
• Arguments in defense of past actions
• An opinion or value
• A new idea that seems good
• Something only a Ph.D. can collect
Evaluation and Research

- Evaluation is best conceived of as a type of research
- Therefore, is subject to the same demands of methodological rigor - validity and reliability.
An important yet often neglected point

Who owns this data?

“Before I write my name on the board, I’ll need to know how you’re planning to use that data.”

© 2016 Peter Vrabelovics
What to evaluate?
Research Impact Framework

Research-related impacts
Policy impacts
Service impacts
Societal impacts
Health literacy in communities

Health Literacy: Golden rule

Engage people early and often

Integrative Health

Include their whole lives

Prevention of Chronic Disease

To achieve prevention
What does that have to do with evaluation?

Engage people early and often
- Formative research and evaluation
- Tailoring materials
- Participatory research and evaluation

Include their whole lives
- Who to involve
- When and where to ask
- How to ask
- What to ask

Prevent chronic disease
- The absolute need for objective health indicators
When to evaluate?

SO WHAT DO YOU THINK OF THE CHANGES WE’RE MAKING?
When to evaluate?

- Formative
- Baseline
- Process
- Outcomes
- Sustainability

Best practice:

All of these
Four quick examples

- Life Enhancement Program
- Theater for Health
- Healthy Table
- Healthy Community
LEP – 40 hour minimum

- Tailored to each community based on formative evaluation
- Pre, Post, +1 and (at some sites) +2 year assessments
- 12 3-hour sessions - food demos, grocery store visit, exercise, integrative health, finding joy in life

At least four One-On-One consultations:
1. Integrative Health
2. Behavioral Health
3. Nutrition
4. Exercise

Optional if warranted:
- Medication & Supplements Review
- Spirituality
A health literate health system
Health literacy improvements in the LEP

Find
Average attendance at over 60%; 73%+ completion

Understand
20%+ increase in health knowledge

Evaluate
9% - 20% increase in program domain (e.g. nutrition/ exercise/ int. health, etc.) related self-efficacy

Communicate
Share information with over 15 other people on average

Use
Statistically sig. healthy changes in blood indicators, depression, stress, civic engagement, etc.
Or .. Just use the Calgary Charter Health Literacy Scale (4-point Likert scale)

<table>
<thead>
<tr>
<th>Frequency of engaging in the following tasks:</th>
<th>Pre Average</th>
<th>Post Average</th>
<th>% Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Find / look for health information</td>
<td>2.7</td>
<td>2.8</td>
<td>7 %</td>
</tr>
<tr>
<td>Understand information about your health</td>
<td>2.9</td>
<td>3.2</td>
<td>9 %</td>
</tr>
<tr>
<td>Evaluate how health information relates to your life (for example, determine if and how information is relevant to your life)</td>
<td>2.8</td>
<td>3.1</td>
<td>10 %</td>
</tr>
<tr>
<td>Communicate about your health to others</td>
<td>2.5</td>
<td>2.9</td>
<td>14 %</td>
</tr>
<tr>
<td>Act on information about your health</td>
<td>2.7</td>
<td>3.1</td>
<td>14 %</td>
</tr>
</tbody>
</table>
TfH overall approach
30 hours max contact time

- Identify local partners
- Formative research in community
- Two-week workshop in Lima with all team members
- Baseline data collection in community
- 12 episodes over 11 weeks - began and ended with festivals of health
- Process data collection after each episode
- Post data collection in community
Theater for Health in Peru - Logic Model

Performance Content
- Scientific Information
- Cultural Narratives
- Local Geographic

Performance (Intervention) Structure
- Arts
  - Mixed media - audience attraction
- Theatre (multimedia narratives)
  - Opening situation
  - Need for transformation
  - Audience engagement to develop solution

Program Outcomes
- Increase health literacy
  - Change behaviors
    - Improve household hygiene
  - Improve individual and public health

Evaluation:
- Formative research
- Baseline evaluation
- Process evaluation
- Outcome evaluation
Health literacy improvements in TfHealth

Find

97.6% of survey participants were aware of performances; 69.6% attended performances; 7.3% said they attended by did not watch

Understand

65% increase in knowledge about household hygiene

Evaluate

23% increase in correct assessment of risk from respiratory and stomach diseases in community; self-efficacy significantly increases Pre/Post

Communicate

53% increase in # of people discussed household hygiene and performances
Health literacy improvements in TfHealth

Use

• Over half (57.4%) reported that their family had made hygiene behavior changes during the performances.

• Percent positive rates of *E. coli* and *Listeria* generally decreased at Post compared to Pre. For example, regardless of organism, percent positives detected in the food preparation area decreased overall by an average of 34.4% in the post
Healthy Community Program – 16-24 hours

- Pre/Post evaluation of participants (adults & youth)
- Saturday mornings for 4 hours at a middle school in Tucson, AZ
- 2014 – 4 sessions; 2015 – 6 sessions
  - Exercise/ body movement
  - Stress management
  - Healthy meal planning and eating as a family
  - Gardening
- 2015 – Added Goal-setting & Sense of purpose sessions
Health literacy improvements in Healthy Community (2015)

Find

Over 150 adults and youth experienced the pilot.

Understand

Adult - 21.7% increase in health knowledge (exercise, nutrition, stress management, gardening). Youth - 53.8% increase in knowledge of correct hand-washing techniques.
Adults reported a 36.9% increase in favorable responses toward trying new ways of preparing vegetables and fruits, a 19.9% increase in thinking about healthier food choices more often when planning meals for their families, and a 35% increase in their confidence to plant and grow herbs and vegetables.
Health literacy improvements in Healthy Community (2015)

- **Communicate**
  - 42 participants learned of health conditions and received a referral/consult. 17% increase in telling health goals to friends and family members so they can provide support.

- **Use**
  - Adults - 36.9% increase in trying new ways of preparing vegetables and fruits. Youth - 66.7% increase in growing fruits and vegetables at home.
Or .. Just use the Calgary Charter Health Literacy Scale (4-point Likert scale)

<table>
<thead>
<tr>
<th>Frequency of engaging in the following tasks:</th>
<th>Pre Average</th>
<th>Post Average</th>
<th>% Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Find / look for health information</td>
<td>2.3</td>
<td>2.7</td>
<td>+ 17%</td>
</tr>
<tr>
<td>Understand information about your health</td>
<td>2.6</td>
<td>3.1</td>
<td>+ 19%</td>
</tr>
<tr>
<td>Evaluate how health information relates to your life (for example, determine if and how information is relevant to your life)</td>
<td>2.6</td>
<td>3.2</td>
<td>+ 23%</td>
</tr>
<tr>
<td>Communicate about your health to others</td>
<td>2.3</td>
<td>3.0</td>
<td>+ 30%</td>
</tr>
<tr>
<td>Act on information about your health</td>
<td>2.5</td>
<td>3.0</td>
<td>+ 20%</td>
</tr>
</tbody>
</table>
Healthy Table Program – \(\approx 17.5\) hours

- Baseline evaluation of participants
- Session 1: Essentials of Food and Cooking
- Session 2: Healthy Cooking on a Budget
- Session 3: Shopping Excursion
- Session 4: Healthy Fast Meals
- Session 5: Chicken and Fish 101
- Session 6: Garden to Table
- Session 7: ‘Top Chef’ Challenge / Graduation / Post Evaluation
Preliminary outcomes of the Healthy Table program

“2 participants mentioned that their doctors had reduced their hypertension meds – one in half, and the other is now only taking 1/4 of her previous dose. They both made significant reductions in their salt intake”
Health literacy in a community: How much is enough?

<table>
<thead>
<tr>
<th></th>
<th>Dose – Contact hours</th>
<th>Response – During the last month, how many days were you prevented from doing normal activities because of physical problems or mental health?</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEP</td>
<td>40 min.</td>
<td>41% decrease</td>
</tr>
<tr>
<td>Theater for Health</td>
<td>30 max.</td>
<td>25% decrease</td>
</tr>
<tr>
<td>Healthy Community</td>
<td>≈17.5</td>
<td>11% decrease</td>
</tr>
</tbody>
</table>
Health literacy in a community: Is it cost-effective?

Using change in Quality-adjusted life year (Pre/ Post) as basis:

• For 100 LEP participants, cost of improved health status in the first year is occurring at a cost between $376,400 - $570,500 lower than other interventions to produce similar health gains.
  • Based on range of the average cost of a QALY in the United States.
  • Calculation based on using CDC’s healthy days index to predict EQ-5D scores (Haomiao, et al. 2011)
Thank you!!!

Andrew Pleasant

520 245-9312

apleasant@healthliteracy.media
andrew@canyonranchinstitute.org

www.healthliteracy.media
www.canyonranchinstitute.org

Twitter – @andrewpleasant