Community-Engaged Measure Development for Framing Questions about Culture in Interventions: Culture and Intervention—Measuring Outcomes

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Three Questions about Outcome Measures

• How can we create outcome measures that are locally relevant and culturally embedded?

• How can we “measure culture”?
  – Case examples
    • What are important locally defined outcomes for intervention?

• Why is this a critical issue for evaluation research and intervention science?
Why is this issue important for intervention science? Successful intervention outcome assessment uses measures that possess two interrelated attributes:

- Culturally resonant
- Responsive to change associated with intervention
Framing a way to think about “measuring culture”

• Distinguish
  – Surface elements of culture
  – Cultural identification
  – Cultural immersion-engagement in cultural practices
  – Critical and distinct elements of culture that are specific foci of your intervention: the behavior/attitudes in your local theory of change
Examples of framing a question about culture

1) Local outcome measures
2) Methods to develop measures
Case Examples from Prevention Research: Protective Factors for Yup’ik Youth from Suicide and Alcohol Abuse

Are traditional cultural activities for youth effective as prevention?

Multilevel model of cultural factors in protection.
Theory of Change—Identifies culture specific outcomes

Cuqyun Protective Factors Pathways Model

- Community Characteristics
- Family Characteristics
- Individual Characteristics
- Peer Effects
- Reflective Processes
- Reasons for Life

Statistical Measures:
- GFI = .93
- CFI = .933
- RMSEA = .058

Significance Levels:
- * p < .05
- ** p < .01
- *** p < .001
Example 1:
Individual
Protective Factors
Multicultural Mastery Scale

Types of Mastery
Self-mastery refers to problem-focused coping facilitated through personal agency. Communal mastery describes problem solving through an interwoven social network. Mastery-Friends Mastery-Family
Example 2: Family Protective Factors
Brief Family Relationships Scale (BFRS)

Refers to family strengths including *Cohesion* of the family, *emotional Expressiveness* of the family support for the young person, and family *Conflict* resolution capacities.
Example 3: Alcohol Protective Factors

Umyuangcaryaraq = ‘reflecting’:
Reflective processes about the consequences of alcohol use

Youth perceptions of the likelihood of experiencing specific consequences if they use alcohol
Reflective capacity to consider potential consequences of actions
Based in previous work studying the concept of “ellangneq”

Ellangneq—Awareness of connection with others, the natural environment, and the spirit world, and reflection on the consequences of alcohol use on these connections.

Reflective processes refers to thinking over potential negative consequences of alcohol
Example 4—

**Connectedness**

Awareness of **Connectedness Scale**

*Connectedness* refers to the interrelated welfare of the individual, one’s family, one’s community, and the natural environment.
Tools to Develop Measures

① Collaborative measurement development
② IRT modeling at the item level
③ SEQ modeling at the subscale level
① Collaborative measurement development

University Co-researchers

Community Co-researchers

Yup’ik Cultural Experts

Yup’ik Focus Groups

Individual administration Cognitive Interviewing

Outcome Measure In Intervention Feasibility Study

Measurement Development Study N = 450

Pilot N = 5

Pilot 1 N = 50

IRT / CFA

IRT

IRT
Family Environment Scale (FES)  
(Moos & Moos, 1981)

- Original goal was to adapt the FES for Yup’ik adolescents
  - We discovered almost none of the items worked with Yup’ik youth or families
  - Led us to develop a new measure of the family environment
Item Revision

• The use of English in many tribal communities constitutes a dialect: In Yup’ik communities English is embedded within complex rules of syntax, sociolinguistics, and alternative colloquialisms and usages. In addition, some items can be culturally inappropriate:
  – Original: Family members try to one up or outdo each other.
  – Revision: In our family there is a feeling of togetherness.
(2) IRT modeling at the item level

Response Format:

Yup’ik Elders in Focus Groups emphasized “Use 3’s”–
Anchors: “Not at all, Somewhat, A lot”

![Graphs showing five-category and three-category calibrations for Item 9.](image)

Figure 3. Comparison of trace lines for the five- and three-category calibrations for Item 9.
Item Difficulty

Brief Family Relationship Dimension Scale
BFRDS

(2) IRT modeling at the item level
Keep Measures Brief

SID (person) - MAP - OCQ (Item)
<more> | <rare>

EACH "#" IS 2. EACH "." IS 1.
Reflective processes item functioning / optimal response level calibration: Item functioning

Figure 2. Item information functions from the five-category calibration for the general construct (G).
(3) SEQ modeling at the subscale level

Internal Structure of the Multicultural Mastery Scale

\[ \chi^2 = 177.2(79), \text{goodness-of-fit index} = .924, \text{comparative fit index} = .918, \text{root-mean-square error of approximation} = .066. \] **p < .01.**
Culture and Intervention—Measuring Outcomes

- Culture matters in measuring outcomes
- Tools for developing measures of specific cultural processes
- Critical role of community engagement in measurement development
Quyana

- To the Ancestors, the ones who created the path
  - Joe Joseph, Catherine Agayar,
  - Edward Andrews, Bart Agathluk Sr., Gerald V. Mohatt,
- To the Elders
- To the Tribes
- To the Yukon Kuskokwim Health Corporation
- To the Regional Qasgiq
- To the Lower Yukon School District
- To the National Institutes of Health
  - National Institute of Alcohol Abuse and Alcoholism (NIAAA) and the National Center for Minority Health Disparities (NCMHD) 1RO1 AA 11446-03, National Center for Research Resources (P20 RR016430, Gerald V. Mohatt, Bert Boyer PI), NIAAA Grants 1R21 AA015541 (Gerald V. Mohatt, PI and James Allen, Co-I) and 1 R21 AA016098-01 (James Allen, PI, Gerald Mohatt and John Gonzalez, Co-I), and NCMHD 1R24 MD001626 (Gerald V. Mohatt, PI, James Allen and John Gonzalez, Co-I), and NIMHD 5R24 MD001626 (James Allen, PI, Gerald V. Mohatt, Stacy Rasmus, Co-I)

A special thank you to the youth and families who participated in the Qungasvik Projects
References


