Enculturating Science: Community-Centric design of behavior change interactions for accelerating health impact

SBC Working Group Journal Club
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Enculturating Science:
Community-Centric design of behavior change interactions for accelerating health impact

Seminars in Perinatology, 2015, 39(5):393-415
Vishwajeet Kumar, Aarti Kumar, Amit Kumar Ghosh, Rigzin Samphel, Ranjanaa Yadov, Diana Yeung, and Gary Darmstadt
Journal Club Overview

- Overview of publication
  - I: Background
  - II: General framework
  - III: Application & results
- IV: Discussion
Kumar et al argue that we know best practices to achieve improved health but application is issue

Barrier to application is our inability to “unbox” the “black box” of family health behaviors in community settings

Community-centric designs that include believability, desirability, learnability and do-ability at both individual and community level are key
## Differences in worldviews

<table>
<thead>
<tr>
<th>Concept</th>
<th>Western worldview</th>
<th>Eastern worldview</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relationship between man &amp; nature</td>
<td>Anthropocentric</td>
<td>Ecocentric</td>
</tr>
<tr>
<td>Locus of power and control</td>
<td>Primacy of personal agency</td>
<td>Primacy of collective agency</td>
</tr>
<tr>
<td>Cognitive orientation</td>
<td>Analytic</td>
<td>Holistic</td>
</tr>
<tr>
<td>Perception of reality</td>
<td>One</td>
<td>Many</td>
</tr>
<tr>
<td>Man in the context of society</td>
<td>Individualism</td>
<td>Collectivism</td>
</tr>
<tr>
<td>Nature of soul’s journey &amp; directionality of time</td>
<td>Linear</td>
<td>Cyclical</td>
</tr>
</tbody>
</table>

*I: Background: Unboxing the black box*
Worldviews shape biomedical and traditional sociocognitive systems

<table>
<thead>
<tr>
<th>Belief/process</th>
<th>Biomedical</th>
<th>Traditional</th>
</tr>
</thead>
<tbody>
<tr>
<td>Importance of human life</td>
<td>One live</td>
<td>Circle of life</td>
</tr>
<tr>
<td>Perceived complexity of the world</td>
<td>Low perceived complexity</td>
<td>High perceived complexity</td>
</tr>
<tr>
<td>Bounds of human possibilities</td>
<td>Boundless</td>
<td>Perceived limitations</td>
</tr>
<tr>
<td>Cause attribution</td>
<td>Systematic scientific inquiry and causes known</td>
<td>External forces not known to common man</td>
</tr>
<tr>
<td>Social relationships</td>
<td>Exchanges of services of value</td>
<td>Lifelong and based on reciprocity</td>
</tr>
<tr>
<td>Risk-taking attitude</td>
<td>Calculated risks</td>
<td>Risk minimizing</td>
</tr>
</tbody>
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<th>Belief/process</th>
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<tbody>
<tr>
<td>Reasoning</td>
<td>Logic &amp; rules</td>
<td>Analogies, metaphors &amp; relationships</td>
</tr>
<tr>
<td>Approach to learning</td>
<td>Cognitive approach</td>
<td>Experiential approach</td>
</tr>
<tr>
<td>Factors governing behavior</td>
<td>Attitudes, needs, desires, rights, &amp; contracts</td>
<td>Norms, obligations, &amp; duties</td>
</tr>
<tr>
<td>Decision-making</td>
<td>Rational analysis of advantages &amp; disadvantages; importance of individual agency</td>
<td>Relationship and trust based; importance of collective decision-making &amp; consensus</td>
</tr>
</tbody>
</table>

I: Background: Unboxing the black box
## Disconnect between biomedical & traditional worldviews

### Biomedical
- Educated
- Policy makers
- Program designers

### Traditional
- Lack formal education
- Communities
- Individuals

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*I: Background: Unboxing the black box*
Lack of empathy & lack of understanding

Biomedical

Traditional

† Background: Unboxing the black box
II: General Framework

- Step 1: Map the as-is state and identify root beliefs
- Step 2: Map the existing practices against risk factors and proven interventions to define the intervention package
- Step 3: Develop the Behavior Change Management (BCM) framework
- Step 4: Design behavior change interactions
Step 3: BCM framework

- Factors to consider
- Strategy for transcultural adaptation
- Strategy for stakeholder alignment at multiple levels
Step 3: BCM framework

Factors to consider

- Differences in worldviews and underlying beliefs
- Multiplicity of practitioners, decision-makers, and influencers at multiple levels
- Process for behavioral adaptation and social normalization
- Strategic location for the interactions
Step 3: BCM framework

- Strategy for transcultural adaptation
  - Believability
  - Desirability
  - Learnability
  - Do-ability

- Strategy for stakeholder alignment at multiple levels
  - Individual & Community & class/caste considerations
Application to neonatal health in Uttar Pradesh

- Step 1: Identification of root traditional beliefs
  - Ritual pollution
  - Attribution of death to jamoga (evil eye/evil spirits)

- Step 2: Map practices to risk factors & proven interventions
  - Infection, hypothermia, birth asphyxia & hypoglycemia

III: Application & Results: Neonatal mortality in Uttar Pradesh
Step 3: Develop BCM Strategy

- Focus on building upon pre-existing beliefs and concepts existing in community to “anchor” new knowledge
- Concept of hygiene was intangible and conflicted with entrenched notion of ritual pollution
- Utilize existing cultural concepts of hot and cold to create a new mental framework for the key risk factor of hypothermia... *thanda bukhar* ("cold fever")
- Introduction of skin-to-skin contact provided experiential learning and “evidence” to community

III: Application & Results: Neonatal mortality in Uttar Pradesh
Application to neonatal health in Uttar Pradesh

- Step 3: Develop BCM Strategy (continued)
  - Mother-in-laws were perceived to be upholders of tradition so needed to be encouraged by traditional influencers
  - Full utilization of health workers through acknowledgement they hold traditional views
  - Community engagement and meetings
  - Full intervention package: birth preparedness, clean delivery and cord care, thermal care, breastfeeding promotion, and danger sign recognition

III: Application & Results: Neonatal mortality in Uttar Pradesh
Step 4: Designing behavior change interactions

- Group interactions
  - Community meetings, folk song creation, stakeholder meetings
- Individual interactions
  - Antenatal visits, postnatal visits, household/individual behavior plan
  - Messages worked with and build upon existing mental models
Step 4: Designing behavior change interactions (continued)

- “To quickly ripen raw mangoes, you cover them with straw to keep them warm. A preterm baby is like the raw mango and needs to be kept warm for him/her to develop faster.”
- “When you come out after a dip in the pond, if you just wipe your face, won’t you feel cold? If you just wipe the face of the baby, but the rest of the body remains wet, the baby will feel cold and will develop thanda bukhaar.”
Application to neonatal health in Uttar Pradesh

- RCT conducted in 39 village units (104,123 total population) in Shivgarh, Uttar Pradesh, India

- 3-arm trial with (1) control, (2) behavioral intervention, and (3) behavioral intervention + hypothermia indicator

- Behavioral intervention arm saw 54% reduction in neonatal mortality
  - Behavioral plus arm saw 52% reduction in NN mortality

- Subsequent analyses revealed improvements on maternal health, gender equity for the girl child, and social status of low caste women

III: Application & Results: Neonatal mortality in Uttar Pradesh
Discussion Questions

- Does this article present anything new?
- How does it differ from existing methodologies that are currently in use?
- How scalable and feasible is this approach?
Discussion Questions

- How has the Western vs Eastern view or the biomedical vs traditional view been applied recently?
- To what extent is a genuine community-centric approach used in designing programs today?
- To what extent is deep understanding of existing practices using empathy used in designing programs today?

IV: Discussion Questions
“Training methodologies frequently overlook the pre-existing beliefs of health workers. While workers may get trained in delivering interactions through a protocolized process and may even be able to memorize pre-designed messages, their own lack of belief and understanding of the knowledge may prevent them from convincingly negotiating with families.”
“...individuals who lack exposure to formal reading may also, for the same reason, be unable to correctly interpret and understand pictures. ... The more a picture departs from retinal image of the object depicted ... the more difficult it is for them to interpret and make use of the image. Thus, photographs are easier for illiterate individuals to interpret than drawings...”

IV: Discussion Questions
Thank you for an interesting discussion!

For questions, contact Elizabeth Long at elizabeth@dtainnovation.com