Creating a Study Specific Conceptual Framework

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Phases of Disparities Research

**Detect**
Define health disparities
Measure disparities in vulnerable populations

**Understand**
Identify determinants of disparities

**Reduce**
Intervene
Translate/disseminate
Change policy

What is it about being in a minority group that could lead to poorer health?

- Behaviors, attitudes, values, beliefs
- Access to health care
- Quality of health care
- Discrimination, educational experiences
Reducing Disparities

How can we design and evaluate interventions that can improve health in minority populations?

- Evidence-based
- Designed to meet needs of population
- Appealing/culturally sensitive
- Practical, feasible
- Effective
Role of Conceptual Frameworks to Understand and Reduce Disparities

- Ground research in theory and knowledge
- Identify and organize key variables on pathway
- Help develop specific research questions and methods of analysis
- Guide selection of measures
- Visually depict study
Advantages of Conceptual Frameworks

- For proposals
  - Clarify specific aims

- For epidemiologic studies
  - Clarify determinants, mediators, and moderators of health outcome

- For interventions
  - Clarify mechanisms of action of intervention components
Study-Specific Conceptual Framework

- Definition: A diagram of proposed causal linkages among a set of concepts believed to be related to a particular health problem

Types of Conceptual Frameworks

- Population science
  - Multi-level determinants of health
- Health services research
  - How health care affects health
- Interventions
  - How intervention components are linked to outcomes
Types of Conceptual Frameworks

- **Population science**
  - Multi-level determinants of health

- Health services research
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- Interventions
  - How intervention components are linked to outcomes
Ecological Context Generic Model

- Society
- Community
- Family
- Individual
Multi-level (Ecological) Determinants of Health Disparities

Contextual factors
- Physical environment
- Social environment
- Health care
- Economic resources
- Community resources
- Societal, political

Individual-level factors
- Sociodemographic – age, race, ethnicity, education
- Psychosocial – coping, social support
- Lifestyle – physical activity, diet, smoking
- Psychological – beliefs, attitudes, personality

Health disparities
Health Care as Determinant of Health Disparities

Contextual factors  Individual-level factors

Physical environment  Sociodemographic – age, race, ethnicity, education
Social environment  Psychosocial – coping, social support
Health care  Lifestyle – physical activity, diet, smoking
Economic resources  Psychological – beliefs, attitudes, personality
Community resources  Societal, political

Health disparities
Types of Conceptual Frameworks

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- **Health services research**
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Agency for Healthcare Research and Quality (AHRQ)

Annual report on healthcare disparities (since 2003)

https://www.ahrq.gov/research/findings/nhqrdr/nhqdr16/index.html
# Conceptual Framework: National Healthcare Disparities Reports

## Consumer perspectives on health care needs

<table>
<thead>
<tr>
<th></th>
<th>Components of Healthcare Quality</th>
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<tbody>
<tr>
<td></td>
<td>Safety</td>
</tr>
<tr>
<td>Staying healthy</td>
<td></td>
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<tr>
<td>Getting better</td>
<td></td>
</tr>
<tr>
<td>Living with illness or disability</td>
<td></td>
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<tr>
<td>Coping with the end of life</td>
<td></td>
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</table>

*Equity*
The Structure-Process-Outcome Paradigm for Assessing Quality of Care

Structure of care - system

Process of care - technical - interpersonal

Patient health outcomes - clinical - individual

Technical process – knowledge and judgement skills
Interpersonal process – the way care is provided

The Structure-Process-Outcome Paradigm: Variations (cont)

- Structure of care -system
- Process of care -technical -interpersonal
- Intermediate outcomes -compliance -knowledge
- Long-term outcomes -health
The Structure-Process-Outcome Paradigm: Variations (cont)

- **Structure of care -system**
- **Process of care:**
  - technical care
  - interpersonal care
- **Intermediate outcomes**
  - blood pressure
  - HbA1c
- **Long-term outcomes**
  - diabetes
  - CVD
The Structure-Process-Outcome Paradigm: Variations (cont)

Structure of care - system

Process of care: - technical care - interpersonal care

Intermediate outcomes - blood pressure - HbA1c

Long-term outcomes - diabetes - CVD

Provider characteristics
The Structure-Process-Outcome Paradigm: Variations (cont)

Structure of care -system

Process of care: -technical care -interpersonal care

Intermediate outcomes -blood pressure -HbA1c

Provider characteristics

Patient characteristics -age, education, LEP -health behaviors -communication skills

Long-term outcomes -diabetes -CVD
Interpersonal Processes of Care and Health Disparities

- Does the quality of MD-patient communication affect health outcomes?
- Are there disparities in receipt of shared decision making?
  - Do these disparities affect health outcomes?
The intervention will increase compliance with treatment by training doctors to communicate risk information in a manner that is culturally appropriate and easily understood by patients.

We will assess patient understanding of risk and treatment details as an explanation for the intervention’s effect on compliance.

From RCMAR Webinar “Incorporating Conceptual Models Into Your Research Proposals” by Clemma Muller (Feb 22, 2018)
Study-Specific Conceptual Framework

*Cause*

MD-Patient communication

*Effect*

Compliance

The intervention will increase compliance with treatment by training doctors to communicate risk information in a manner that is culturally appropriate and easily understood by patients.
The intervention will increase compliance with treatment by training doctors to communicate risk information in a manner that is culturally appropriate and easily understood by patients.

We will assess patient understanding of risk and treatment details as an explanation for the intervention’s effect on compliance.
Adding Modifying and Confounding Variables

- MD & Patient genders or race/ethnicity
- MD-Patient communication
- Patient understanding of regimen
- Compliance
- Complexity of regimen

Technical Process of Care and Health Disparities

- Are treatments less effective for racial/ethnic minorities than whites?
- Are appropriate diagnostic procedures used less often for minorities than whites?
  - Do these affect health outcomes
- Are optimal treatments provided less often for minorities?
Types of Conceptual Frameworks

- Population science
- Multi-level determinants of health
- Health services research
  - How health care affects health

**Interventions**
- How intervention components are linked to outcomes
Intervention Conceptual Frameworks: Two Related Purposes

- How intervention works to improve outcomes
  - Proposed mechanisms
  - Overall visual depiction
- How intervention components map to outcomes
  - To choose measures
How Framework Clarifies Narrative (Example)

- Cognitive-Behavioral Stress-Management Intervention
  - Based on social cognitive theory, the cognitive-behavioral stress management intervention (CBSM) aims to improve outcomes through two cognitive and behavioral mediators (self-efficacy and self-management practices) and social support.

Conceptual Framework: CBSM Intervention

**FIGURE 1: CONCEPTUAL FRAMEWORK**

**INTERVENTION COMPONENTS**
- **Nuevo Amanecer**
  - 8-week CBSM program
  - Emotional support
  - Cancer information
  - Management of emotions
  - Model self-care behaviors
  - Goal-setting
  - Practice coping and communication skills
  - Feedback and coaching
  - Shared culture and cancer experience

**MEDIATORS**
- CBSM practices
- Cancer self-efficacy
- Perceived support

**OUTCOMES**
- Breast cancer-specific quality of life
- General distress
  - Depression
  - Anxiety
  - Somatization
- Breast cancer-specific distress
Conceptual Framework: Pain Self-Management (PSM) Intervention

**Intervention Components**
- Group sessions
- Peer interventionist
- One-on-one PSM session

**Proximal Mediators**
- Social support
- Self-efficacy
- Pain self-management skills
- Self-regulation

**Adoption of PSM behaviors**

**Outcomes:**
- Pain severity & interference
- Physical function
- Emotional well-being

Community of Voices (Choral Singing) Conceptual Framework

Engagement components

- Psycho-social
  - New friends
  - Weekly activity
  - Singing is joyful

- Physical
  - Stand to sing
  - Stretch/warm up

- Cognitive
  - Learn new music
  - Attend to director

Mechanisms

- Sense of belonging
- Meaningful activity
- Strength
- Balance
- Brain stimulation

Outcomes

- Social network
- Loneliness
- Depression
- Anxiety
- Lower body strength
- Balance
- Executive function
- Memory

Map Intervention Components to Outcomes

- For each desired outcome, describe how intervention or components might affect it
  - Specific types of changes you expect
- Map “need” that component is addressing
CBSM Intervention for Latinas with Breast Cancer

<table>
<thead>
<tr>
<th>Psychosocial issue/Need</th>
<th>Intervention component</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of comprehensible information</td>
<td>Language- and literacy-appropriate information</td>
<td>Self-efficacy for obtaining information</td>
</tr>
<tr>
<td>Fear of death and recurrence</td>
<td>Stress management skills training</td>
<td>Fear of recurrence</td>
</tr>
<tr>
<td>Ineffective communication with doctors</td>
<td>Communication skills training</td>
<td>Confidence asking doctors questions</td>
</tr>
<tr>
<td>Emotional distress, anxiety</td>
<td>Skills training – managing emotions</td>
<td>Anxiety, health distress</td>
</tr>
</tbody>
</table>

Nápoles et al., 2014.
Lifestyle Intervention to Reduce Risk of Diabetes in Low-SES Adults

<table>
<thead>
<tr>
<th>Need/Goal</th>
<th>Component: Education and Skills Training</th>
<th>Outcome</th>
</tr>
</thead>
</table>
| Increase physical activity (PA)  | - Guidelines for PA  
- How to incorporate walking into daily routine  
- How to track PA                                                                      | Time sitting  
Frequency of walking                      |
| Lose weight                      | - How to monitor food intake  
- Benefits of smaller plates                                                                   | BMI                                          |
| Eat “smart”                      | - Benefits of colorful fruits & vegetables  
- How to buy low-cost fruits & vegetables                                                      | Frequency eating fruits and vegetables       |

## Community of Voices (Choral Singing) Intervention

<table>
<thead>
<tr>
<th>Engagement Component</th>
<th>Mechanism</th>
<th>Outcome</th>
<th>Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learn and read lyrics and melody</td>
<td>Cognitive stimulation</td>
<td>Memory, verbal fluency</td>
<td>Rey Short-term Memory</td>
</tr>
<tr>
<td>Socialize</td>
<td>Meet new people, sense of belonging</td>
<td>Loneliness</td>
<td>NIH Loneliness scale</td>
</tr>
<tr>
<td>Sing favorite songs</td>
<td>Singing is uplifting, creates joy</td>
<td>Depression</td>
<td>PHQ-9 Depression Scale</td>
</tr>
<tr>
<td>Hold phrases, vocal control</td>
<td>Ability to hold breath through phrases</td>
<td>Respiratory function</td>
<td>Shortness of Breath Scale</td>
</tr>
</tbody>
</table>

Johnson et al., 2015.
References


References (cont)


