Beliefs and Attitudes toward Scientific Evidence in Health

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Overview

• Provide background for beliefs and attitudes toward evidence based medical information
• Discuss significance to health communication and shared decision making strategies
• Examine methods and findings of measuring beliefs/attitudes
  • Initial findings from focus groups
• Highlight my role and lessons learned
Patient-Centered Care

- Comparative Effectiveness (CE) Research: The comparison of existing healthcare interventions to determine which will work best, for whom and under what conditions

- Providing more information on the CE of medical interventions will lead to more shared decision making and better communication
Push for Patient Education

- Agencies have developed patient guides for patients to use regarding health decisions
  - Guides summarize data from CE research
Questions for Research

1) How much do patients and the public understand and use such information?

2) How much do patients and the public value data generated from scientific studies as compared to other types of health information?
Significance

• Value that people place on such scientific evidence may be affected by many factors

• Having a better understanding of how patients and the public view scientific evidence can help improve health communication and improve shared decision making
Figure 2. Public confidence in those running institutions. Percentage of respondents saying that "they have a great deal of confidence."
Theoretical Framework

Attitudes toward Science in Health

- Consistency of Findings with Pre-Existing Beliefs
  - Cultural
  - Scientific
  - Religious

- Knowledge of the Scientific Process
  - Education
  - Scientific Background
  - Scientific Literacy

- Experience with Scientific Process and Reporting
  - Scientific Community, Sponsors, Sources
  - Statistics
  - Personal Physician

- Consistency of Findings with Personal Values
  - Values: Religious, Professional, Political, Cultural
  - Perceived Equity and "Rights" to Healthcare

- Attitudes toward Science
Objectives

1) Develop a scale to measure patient beliefs and attitudes toward scientific evidence in health

2) Evaluate the association of individual factors towards the public’s beliefs/attitudes towards scientific evidence

Hypotheses: Individuals with greatest exposure to science / higher health literacy will place greater value on scientific evidence
Phase 1

**Design:** Development of the Belief in and Attitudes toward Scientific Evidence in Health Scale (BASE-H)

**Target population:** Primary care patients from an urban population of diverse background

**Refinement of Conceptual Framework:** Series of 4 focus groups to explore beliefs in the scientific process and importance of results based on our theoretical framework
Focus Group Guide

Topics of Discussion:

1) Icebreaker: What is your favorite food
2) Perceptions of science and health
3) Sources of information about new studies
4) What details people wanted to know
5) Influence of background and culture
6) Would new studies influence your health behavior
Scale Development

• Development of candidate scale items from framework

• Pilot testing and revision using patients in Internal Medicine clinics

• Obtain psychometric test statistics in larger sample (N=300) of target population
Phase 2

**Design:** Telephone survey of test items

**Survey Population:** Random sample of patients from two Penn Internal Medicine Practices will take the finalized survey (N=300)

**Survey Items:** Baseline demographics, literacy using the Rapid Estimate of Adult Learning in Medicine (REALM) scale, and a healthcare distrust scale
Results

1) Focus Group Demographics

2) Focus Group Themes
   a) What comes to mind when you hear “scientific study”? 
   b) Where do you hear about scientific studies? 
   c) What details are important to you?
# Focus Group Demographics

<table>
<thead>
<tr>
<th></th>
<th>Focus Group 1</th>
<th>Focus Group 2</th>
<th>Focus Group 3</th>
<th>Focus Group 4</th>
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</thead>
<tbody>
<tr>
<td><strong>Number of Participants</strong></td>
<td>10</td>
<td>10</td>
<td>7</td>
<td>3</td>
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<td><strong>Race</strong></td>
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<td></td>
<td>4 Male</td>
<td>3 Male</td>
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<td></td>
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<tr>
<td><strong>Age</strong></td>
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<td>Range: 31 to 65</td>
<td>Range: 43 to 79</td>
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<tr>
<td></td>
<td>Average: 50</td>
<td>Average: 51</td>
<td>Average: 59</td>
<td>Average: 57</td>
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<td><strong>Participants with at least some College Education</strong></td>
<td>5</td>
<td>4</td>
<td>3</td>
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</table>
What comes to mind when you hear “scientific study”?

• Most participants had a narrow view
  a) “Lab Rats”, “Monkeys”
  b) “Need consumers to test … unproven drugs”

• A minority of participants had a broader view
  a) “Use the scientific process … create hypothesis”
  b) “Science should be more fact based”
Where do you want to hear about scientific studies?

• Most participants wanted different sources for different types of information

  a) Medications → Physician / Trusted Medical Source
  b) Prevention/Lifestyle → Family/Friends and the News
What details are most important?

Details in decreasing order of perceived emphasis:

1) Demographics of people in study
2) Length of study
3) Number of people in the study
4) Source of funding
5) Use of statistics
6) Control group
7) Randomized assignment
Trials and Tribulations

- Developed focus group guide, going through many versions
- Used waiting room in the two clinics to approach patients and distribute flyers for the four focus groups
- Lead and/or participated in all four focus groups
Lessons Learned

• Four brains are always better than one

• Recruiting patients is always the hardest part of a study

• Make sure the participants don’t all know each other

• Work is always more fun with an awesome PI and great co-workers! (Project Manager Diana Imbert and Penn Student Julie Kozeracki)