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QRMF
Background

• Many women fear losing their breasts . . .

• Mammography screening rates . . .

• Women from minority groups consistently have poorer breast cancer outcomes
Qualitative Studies

#1: 2002-2003
Ring of Silence: A Paradox of womanhood

#2: 2004-2005
Hispanic Women’s Breast and Cancer Screening Narratives

#3: 2005-2007
Past Experiences & Current Mammography Screening Behaviors
Findings

Studies 1 & 2
- Silence
- Societal Contradictions
- Adolescent Teasing
- Family Norms
- Media Influence
- Womanhood
- Self-Portraits

Study 3
- Family Norms/Values
- Teasing
- Self-image
- Media Influence
- Conflict
Themes

- Teasing - Every group shared stories about the teasing that occurred during puberty
- Family norms & values – Women shared stories about family ceremonies (rites of passage)
- Society & Media - Spoken, tacit, and underlying mixed messages women receive from a variety of sources
- Body/Self-Image-Women described themselves in relation to their breast size
MAJOR THEME

*Breast Conflict*

[latent variable]

Definition: the oblivious discord women experience regarding personal feelings about their breasts (how women define themselves in relation to their breasts).
Breast Conflict

Unconscious intrapersonal conflict where the condition for conflict arises during adolescence and is the direct result of self/body image, family norms and values, teasing, and media or societal influence.
Conflict

So, you're really a giraffe trapped in a rhino's body.
BREAST CONFLICT

• MAJOR CONTRIBUTORS:
  – Teasing
  – Society/Media
  – Family Norms/Values

• BEGINS DURING ADOLESCENCE
  – Continues across the life span
  – Impacts mammography attitudes, beliefs, and behaviors
Measurement Model

Body/Self Image

14 items

Societal/Media Influence

6 items

Teasing

5 items

Family Norms/Values

8 items

Breast Conflict

Mammography Screening

OTHER BARRIERS TO MAMMOGRAPHY SCREENING

- Breast cancer beliefs/attitudes
- Breast cancer susceptibility
- Mammography beliefs/attitudes
- Socioeconomics
- Access
Eight Steps in Instrument Development


- Determine what is to be measured
- Generate an item pool
- Determine the format for measurement
- Have initial pool reviewed by experts
- Consider inclusion of validation items
- Administer instrument to a development sample
- Psychometrically evaluate the scale items
- Optimize scale length based on psychometric evaluation
1. Determine what you want to measure

scales/instruments

- Theory
  - i.e. Health Belief Model
- Focus group input
- Qualitative themes/categories
- Literature

WBCS

- Body/self image
- Family norms/values
- Teasing
- Society/media influence

Women’s Breast Conflict Scale (WBCS)
2. Generate an item pool

- Choose items that reflect the purpose of your scale.
- Use redundancy (express similar ideas in different ways)
- Number of items—the larger the better (initially)
- Avoid long questions
- Consider reading difficulty level—aim for reading level between 5th and 7th grade
- Avoid items that convey two or more ideas
<table>
<thead>
<tr>
<th>Participant Quote</th>
<th>Theme</th>
<th>Scale Item</th>
<th>Domain</th>
</tr>
</thead>
<tbody>
<tr>
<td>“I refer to puberty as a heartache because I didn’t know what to expect”</td>
<td>Self Portraits (Self/Body Image)</td>
<td>I looked forward to the physical changes that would occur.</td>
<td>SUBSCALE Internal influence: Self/Body Image</td>
</tr>
<tr>
<td>“My mom made this a special occasion”</td>
<td>Family Norms &amp; Values</td>
<td>My family did something special to celebrate puberty.</td>
<td>SUBSCALE External Influence: Family Norms &amp; Values</td>
</tr>
<tr>
<td>“Wow, never knew she had such knockers” “Because of all that early teasing...to this day, I think of my breasts as a nuisance”</td>
<td>Teasing</td>
<td>Boys said things about my breasts that made me feel bad.</td>
<td>SUBSCALE External influence: Teasing</td>
</tr>
<tr>
<td>“Society wants and expects women to be shaped...like the movie stars and models...”</td>
<td>Society &amp; Media</td>
<td>I wanted to look like the women I saw in the movies or magazines.</td>
<td>SUBSCALE External influence: Societal/Me Media Influence</td>
</tr>
</tbody>
</table>
3. Determine the format

<table>
<thead>
<tr>
<th>When I was age 12 to 18:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>I felt embarrassed to have breasts.</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Entirely true for me</td>
<td>Entirely untrue for me</td>
</tr>
<tr>
<td>AGREE___</td>
<td>DISAGREE___</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly disagree</td>
<td>Strongly disagree</td>
<td>Disagree</td>
<td>Agree</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Visual Analog:**

<table>
<thead>
<tr>
<th>Not at all</th>
<th>Most embarrassing experience ever</th>
</tr>
</thead>
</table>
4. Have initial items reviewed by experts

- Lay (7) and Professional (7) Experts
- Rate the relevance of each item to the latent variable
- Your responsibility to accept or reject advice
- Experts confirm or invalidate scale items and latent variable definition
Content Validity Index (CVI)

- The extent of agreement between the experts is measured by the CVI
- Non-statistical type of validity
- The level of endorsement required to establish the item or instrument content validity beyond the 0.5 level of significance.

### Excerpt from the Clarity Assessment Form

<table>
<thead>
<tr>
<th>When I was age 12 to 18</th>
<th>Clear</th>
<th>Unclear</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SCALE ITEMS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I felt embarrassed to have breasts.</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>My breasts were about the same size as my friends.</td>
<td>+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I did things to make my breasts appear smaller.</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boys said things about my breast that made me feel proud.</td>
<td>+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Women in my family talked openly about their bodies.</td>
<td>+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I believed women should be shaped like the women I saw in the movies or magazines.</td>
<td>-</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Excerpt from the Relevance Assessment Form

**External Influence: Family Norms and Values**

<table>
<thead>
<tr>
<th>Item</th>
<th>Not Relevant</th>
<th>Unable to assess without revision</th>
<th>Relevant but needs minor revision</th>
<th>Very relevant</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Puberty was not a time of celebration for me._comments:</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2. Women in my family talked openly about their bodies. comments:</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>3. An adult female told me what to expect during puberty. + comments:</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
5. Consider including validation items

- Social Desirability- individuals may be motivated to answer questions in a socially acceptable or positive way.
- Consider including a social desirability scale such as the 10 item Marlowe-Crowne Social Desirability Scale

### Original and Revised Items with Content Validity scores

<table>
<thead>
<tr>
<th>Item Number</th>
<th>Original Item</th>
<th>COMM.</th>
<th>PROF.</th>
<th>MEAN</th>
<th>Revised Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I looked forward to the physical changes that would occur during puberty.</td>
<td>0.29</td>
<td>1.00</td>
<td>0.65</td>
<td>This item was not revised.</td>
</tr>
<tr>
<td>2</td>
<td>I compared my breast size to my peers.</td>
<td>0.71</td>
<td>1.00</td>
<td>0.86</td>
<td>I compared my breast size to my peers breast size.</td>
</tr>
<tr>
<td>3</td>
<td>Having my breasts touched made me feel uncomfortable.</td>
<td>1.00</td>
<td>0.86</td>
<td>0.93</td>
<td>Having my breasts touched by a healthcare provider made me feel uncomfortable.</td>
</tr>
</tbody>
</table>
6. Administer the instrument to a sample group

7. Evaluate the items (traditional psychometrics)

8. Optimize the scale length
Recap

– peers were identified as women in the community who may benefit from the instrument
– professional and community members were asked to review the scale items, rate each item on a scale from 1 to 4 for clarity and relevance, and revise unclear statements
– the use of professional and community experts functioned as a check on the findings from my qualitative studies that provided the basis for this new instrument
Challenges & Recommendations

• Several members of the community panel answered the questions personally.
• Include a mock validity and clarity assessment with the researcher in addition to oral and written instructions.
This project was reviewed by the Colorado Multiple Institutional Review Board (COMIRB) and determined that the project is not human subject research as defined by their policies and current regulations and is in accordance with the Office for Human Research Protections.
Questions
Discussion