Testing the face validity and acceptability of the Primary Care Outcomes Questionnaires through cognitive interviews.

Mairead Murphy
Chris Salisbury
Sandra Hollinghurst
What is the PCOQ?

- New, 24-item patient-reported questionnaire
- Designed to meet a need for a new instrument to measure Primary Care sensitive outcomes
- PCOQ measures outcomes which
  - Primary Care patients seek
  - Primary Care clinicians can influence
- Two versions of the PCOQ were originally tested using cognitive interviews.
In this presentation...

- How the PCOQ was developed
- Methods for testing face and content validity using cognitive interviews
- Results of cognitive interviews for PCOQ-status
- Results of cognitive interviews for PCOQ-change
Development of the PCOQ

1. Qualitative: Establish the domains
2. Systematic Literature Review
3. Delphi: Reach consensus on domains
5. Testing: Psychometric properties
Four Domains of the PCOQ

- Pain/Other Physical
- Anxiety/Depression
- Normal Activities
- Life Enjoyment
- Health Concerns

- Understanding,
  Ability to
- Self-Care, Manage
  Symptoms, Stay Healthy

- Ability to access
  healthcare, Trust, Clinician
  will listen and detect
  serious health problems

- Shared Patient/Clinician
  Plan, Adherence, On the
  right path, Sense of
  Support

Health Status

Health Knowledge and Self-Care

Confidence in Health Provision

Confidence in Health Plan

Primary Care Sensitive Outcomes

Cognitive Testing of the PCOQ: Mairead Murphy 2017
1. Two PROM formats were developed to measure the constructs: one that measures **status**, and one that measures **change**.

2. Each PROM had identical items & different 5-point scales:

<table>
<thead>
<tr>
<th>Thinking about your level of understanding: How much do you...</th>
<th>I understand as much as I want</th>
<th>Slightly less than I want</th>
<th>Somewhat less than I want</th>
<th>Quite a bit less than I want</th>
<th>Very much less than I want</th>
</tr>
</thead>
<tbody>
<tr>
<td>Understand your current illness or health problems</td>
<td>☐₁</td>
<td>☐₂</td>
<td>☐₃</td>
<td>☐₄</td>
<td>☐₅</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Thinking about your level of understanding: How much do you...</th>
<th>Much more than before my appointment</th>
<th>More than before my appointment</th>
<th>Same as before my appointment</th>
<th>Less than before my appointment</th>
<th>Much less than before my appointment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Understand your current illness or health problems</td>
<td>☐₁</td>
<td>☐₂</td>
<td>☐₃</td>
<td>☐₄</td>
<td>☐₅</td>
</tr>
</tbody>
</table>
Testing Face and Content Validity

- Content Validity: Items were reviewed by an advisory group of 6 (2 academics, 2 clinicians, 2 patients).

- Face Validity: 20 patients were interviewed in 3 rounds. Questionnaires were adjusted after each round. Tourangeau’s model was modified to identify problems with:
  (1) Comprehension
  (2) Temporal Comprehension
  (3) Decision Process
  (4) Response Process.
Validity of the PCOQ (Status)

**Face Validity**
- 17 out of 20 patients thought it was relevant to them.
- Of the 3 who didn’t, they were in rounds 1 and 2, and the questionnaire was improved for round 3.

**Content Validity**
- Panel of 6 experts, 5 of which were in the Delphi, verified that the content matched the outputs of the Delphi.
## Results of Cognitive Interviews: PCOQ (Status)

<table>
<thead>
<tr>
<th>Category</th>
<th>Round 1</th>
<th>Round 2</th>
<th>Round 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comprehension</td>
<td>22 (11.2%)</td>
<td>9 (4.8%)</td>
<td>5 (3.1%)</td>
</tr>
<tr>
<td>Temporal Comp</td>
<td>2 (1%)</td>
<td>5 (2.6%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Decision Process</td>
<td>3 (1.5%)</td>
<td>1 (0.5%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Response Process</td>
<td>14 (7.1%)</td>
<td>8 (4.2%)</td>
<td>2 (1.2%)</td>
</tr>
</tbody>
</table>

- The total problems identified in each round reduced.
- Independent coding of 4 surveys gave a kappa of 75%.
Decision Process: Patient indicated that she followed “all of the advice” her doctor gave on treatment, despite indicating earlier in the interview that she did not.

Correction: Preamble added “For a variety of reasons, people don’t always follow medical advice. How much of you doctors advice are you following on...
Comprehension

Patient gave an incorrect definition of the word “symptoms”

Correction:
Because the patient appeared to understand the word sufficiently in context, no change was made. The problem may have been introduced by probing.
Response Process: Patient hesitated between “slightly” and “moderately”, and suggested there should be another option, as he felt his true response fitted somewhere between the two.

Correction: No change made, as visual appeal of the questionnaire would have been affected, and the patient did manage to select a response.
Example Issues and Corrections

Temporal Comprehension

Patient responded “quite a bit” to an item on other symptoms because of an asthma attack she had three years ago.

Correction:

Added the word “currently” into the item to emphasise the period “at the moment”.

Cognitive Testing of the PCOQ: Mairead Murphy 2017
Construct Validity of the PCOQ (Status)

68-year old retired male (recruited through PPG) with no major health issues. He is enjoying an active and happy retirement. PCOQ shows high scores in all domains.

48 year old female with rheumatoid arthritis and depression. Is very worried about recent new symptoms of unknown cause. Has good support from, and great trust in her GP.
### Results of Cognitive Interviews: PCOQ (Change)

<table>
<thead>
<tr>
<th>M</th>
<th>H</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>16</td>
</tr>
<tr>
<td>2</td>
<td>0  11</td>
</tr>
<tr>
<td>3</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>0  0</td>
</tr>
<tr>
<td>5</td>
<td>0  4</td>
</tr>
<tr>
<td>6</td>
<td>25</td>
</tr>
<tr>
<td>7</td>
<td>3  2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>44  17</strong></td>
</tr>
</tbody>
</table>

Only one round was carried out

3/6 (50%) of participants thought the scale measured status, not change.

Not possible to code according to Tourangeau framework.

Double coding of 2 questionnaires gave a kappa of only 33%.

> “It was very difficult. There’s nothing there to say whether you were badly off in the first place.” (P1)

1. Misunderstanding: Understood as status scale.
2. Hesitation: Hesitated, left blank or expressed confusion.
Attended the GP for 1) A check-up following a prior injection for trigger finger 2) An injection for frozen shoulder. The shoulder symptoms have improved.

Attended the GP for a routine diabetes check. Improved his understanding. Felt that he was not taken seriously or listened to, and therefore has slightly increased concern.
Conclusions

Cognitive Testing of Status questionnaires.
1. Decision problems may be hidden as comprehension problems
2. Might be helpful to isolate temporal comprehension problems

Cognitive testing of change questionnaires
1. There are problems with change questionnaires - Cognitive testing is essential.
2. Check responses against verbally reported change – are patients reporting change or status?
Comments or Questions

http://www.bristol.ac.uk/primaryhealthcare/resources/pcoq/